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ABSTRACT

This report outlines the educational fiscal impacts of the present Massachusetts system of school finance and describes the fiscal characteristics and effects of alternative finance plans that are both equitable and elastic in nature. The first part of the report describes and evaluates the overall character of the Massachusetts State-local fiscal system and its relationship to the State's system of educational support. Later sections of the study delineate some of the deficiencies in the State and local revenue structure. These sections also note the tax and expenditure characteristics of the present system of school finance. Next, a number of constitutionally sound finance systems are simulated and their fiscal attributes noted. The tax rate requirements for these systems are estimated, and a number of proposed revenue policies are suggested to fund these programs. Finally, a number of policy recommendations are formulated, which should guide the Massachusetts Teachers Association in their deliberations concerning how best to revise the present system of educational finance. (Author)

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EDUCATION FINANCE REFORM IN MASSACHUSETTS:

MEETING THE CONSTITUTIONAL DEMANDS OF

SERRANO v. PRIEST

by

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In the spring of 1972 the MTA Executive Committee requested an examination of alternative methods in financing Massachusetts education. Mr. Felix J. Zollo, Jr., Director of MTA Research, was appointed Chairman of the resulting MTA Education Finance Reform Committee. The Executive Committee and the MTA Board of Directors accepted the Education Finance Reform Committee's report on January 20, 1973.

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TABLE OF CONTENTS

INTRODUCTION 1

CHAPTER I MASSACHUSETTS' FISCAL SYSTEM: AN OVERVIEW 3

1.1 School Finance: The Setting 3

1.2 Fiscal Capacity 3

1.3 Tax Effort 7

1.4 Tax Burden 9

1.5 Assignment of State-Local Fiscal Responsibility 14

1.6 State Revenue Structure 18

1.7 Local Revenue Structure 25

1.8 Intergovernmental Aid Systems 28

1.9 Fiscal Support for Education 33

1.10 Conclusion 35

CHAPTER II MASSACHUSETTS' SCHOOL FINANCE SYSTEM: A DETAILED ANALYSIS 37

2.1 The Existing School Finance System 37

CHAPTER III SIMULATIONS OF FISCALLY NEUTRAL SYSTEMS OF FINANCE 54

3.1 Introduction 54

3.2 The Most Desirable Means of Joint Funding 55

3.3 Questions About Variable Equalization 56

3.4 Simulating the Effects of Variable Equalization 57

3.5 Fiscal Capacity Definitions in the Simulation Models 58

3.6 Variable Equalization and School Revenue 60

3.7 Variable Equalization and School Expenditures 72

3.8 Variable Equalization and School Taxes 76

CHAPTER IV CONCLUSIONS AND RECOMMENDATIONS 90

SUMMARY RECOMMENDATIONS 93

INTRODUCTION

American school finance is approaching an era of radical change. Issues of equal educational opportunity, demands for property tax relief, and calls for increased revenue for urgent school finance requirements are but a few of the challenges facing most State-local educational finance systems. Recent judicial rulings challenging the constitutionality of current school finance systems, taxpayer revolts against rising educational costs particularly noticeable in the record number of recent bond defeats, and greater realization of the costs required for a number of specialized educational programs are but a few of the forces causing many to search for alternative methods of raising and distributing educational revenue.

The main thrust of this search seems to be two-fold in nature. The first part is to construct a school finance system that is constitutionally sound and adheres to the principles of fiscal neutrality laid down in Serrano vs. PRIEST and other related cases. The second is to have an educational revenue system that will consistently provide sufficient monies to meet expanding educational need. In short, the effort is to find a finance system that will equitably raise and distribute educational revenues and do so in a way that will take advantage of the economic growth in the state and the community.

This report seeks to design and simulate a number of alternative school finance plans for Massachusetts. To that end, the report will delineate the educational fiscal impacts of the present system of school finance and describe the fiscal characteristics and effects of alternative finance plans that will be both equitable and elastic in nature.

The report is divided into several parts. The first describes and

evaluates the overall character of the Massachusetts State-local fiscal system and its relationship to the State's system of educational support. Later sections of the study delineate some of the present deficiencies in the State and local revenue structure. These sections also note the tax and expenditure characteristics of the present system of school finance. Next, a number of constitutionally sound finance systems are simulated and their fiscal attributes noted.[1] The tax rate requirements for these systems are estimated and a number of proposed revenue policies are suggested to fund these programs. Finally, a number of policy recommendations are formulated which should guide the Massachusetts Teachers Association in their deliberations as how best to revise the present system of educational finance.

CHAPTER I

MASSACHUSETTS' FISCAL SYSTEM: AN OVERVIEW

1.1 School Finance: The Setting.

School finance occurs within the total context of a State-local fiscal system. To adequately and equitably meet the demands of present educational finance requirements necessitates a knowledge of the various facets of a given structure of public finance. Specifically, factors of fiscal capacity, revenue effort, and tax burden set some of the major parameters of any school finance program.

Yet, other factors such as the assignment of fiscal responsibilities between State and local government and among units of local government, the composition of State and local revenue structures, and the character of Federal and State aid systems also affect school finance needs.[2]

Of even more direct import to the question of school finance change is the comparative nature of the school finance system and the nature of non-public school finances in the State.

Therefore, before considering the particular forms of a revised Massachusetts school finance plan it will be necessary to note the broad outlines of the State's overall finance system.

1.2 Fiscal Capacity.

Massachusetts exhibits a relatively high level of fiscal capacity when measured in a national, but not regional context. When compared with other Northeast States except Connecticut, New York and New Jersey, Massachusetts has a level of income that ranks it as one of the wealthier States in the region. As Table I-1 notes, its per capita income exceeded that of other

Northeast States except Connecticut by as much as $900 per capita in 1969 and will be at a level of $6,500 by 1990. Yet, in comparison with Connecticut its income was over $500 less in 1969 and will be $600 less in 1990. Its fiscal capacity is also exceeded by New York and New Jersey in both years. Even, by 1990, the State's fiscal capacity is expected to be exceeded by the latter States by $600 per capita.

When fiscal capacity is measured by an alternative method--the "average financing" approach--similar results occur.[3] Massachusetts does not have an overly prominent fiscal position, having a capacity that is nearly ten percent less than New York, New Jersey, and New Hampshire, and twenty percent less than Connecticut. (See Table I-2)

Put another way, Massachusetts has only moderate fiscal ability to finance an alternative educational finance system. The extent of that untapped fiscal capacity is revealed in Table I-3. Using estimates derived by the Advisory Commission on Intergovernmental Relations from its average financing system, it can be shown that Massachusetts, at the very least, could raise 8 percent more tax revenue by utilizing rates comparable to those found in Vermont, the highest tax effort State in the Northeast. Or, if it chose to have tax rates similar to those in New York State, it could raise only 17 percent more tax revenue than it presently does. Thus, whether following the high tax rate State in the region or the high tax State in the nation, Massachusetts exhibits only moderate untapped fiscal capacity. This untapped revenue base, however, must be used to finance alternative educational finance plans in Massachusetts.

TABLE I-1

PER CAPITA INCOME, SELECTED STATES
1950-1990 (1967 DOLLARS)*

State	Per Capita Income			Percentage Increase	
	1950	1969	1990	1950-69	1969-90
MASSACHUSETTS	$ 2254	$ 3723	$ 6516	65%	75%
Connecticut	2587	4239	7106	64	68
Maine	1636	2789	5209	70	87
New Hampshire	1826	3171	5856	74	85
New Jersey	2531	3939	7030	56	78
New York	2585	4160	7105	61	71
Rhode Island	2215	3482	6166	57	77
Vermont	1547	3009	5547	94	84
United States	2065	3146	6166	65	81

*U. S. Dept. of Commerce, Survey of Current Business, 1972.

TABLE I-2

REVENUE AND TAX CAPACITY, REPRESENTATIVE TAX SYSTEM, 1967*

State	Revenue Capacity Per Capita	Tax Capacity Per Capita	Revenue Capacity	Tax Capacity
MASSACHUSETTS	$ 385	$ 305	$ 97	$ 98
Connecticut	433	366	109	117
Maine	313	254	79	81
New Hampshire	400	343	101	110
New Jersey	412	335	104	107
New York	447	339	113	108
Rhode Island	353	284	89	91
Vermont	337	275	85	88
United States	396	313	100	100

*Advisory Commission on Intergovernmental Relations, Measuring the Fiscal Capacity and Effort of State and Local Areas: Information Report, (Washington, D. C., 1971.

1.3 Tax Effort.

In combined State-local tax effort, Massachusetts exhibits a level that is at national and regional averages. Its total State-local tax effort has been at or above the national average since 1957 and regionally has exceeded all but Maine, New York, and Vermont. Indeed, its overall tax effort has been consistently 20 percent more than Connecticut and New Jersey, usually ranking fourth in the region. Massachusetts, then, with only a moderate fiscal capacity does not have a comparative fiscal advantage in the region.

Though Massachusetts' tax effort, as measured by tax effort per $1,000 personal income, has been consistently at national or regional averages, its fiscal effort for local schools has been nearly 10 and 20 percent lower than comparable regional and national levels. In regional comparisons, Massachusetts generally exhibits a somewhat lower local school tax effort than both Connecticut and New Jersey. Moreover, it consistently exhibits considerably lower school tax effort than Maine, a poor state, and Vermont and New York, two of the highest tax effort states in the country.

While Massachusetts has maintained average total tax effort in its region and lower school tax effort, its property tax burden has been exceptionally high in both 1957 and 1970. In 1957, its property tax effort was 117 percent of regional and 47 percent of national levels. By 1970, however, its effort was at a level that was 114 percent of the regional and 113 percent of the national average.

Thus, Massachusetts was the highest property tax effort State in the region in both 1957 and 1970. Massachusetts' overall property tax effort increased by 20.4 percent, a rate only somewhat less than the region as a whole. Tables I-4 and I-5 show Massachusetts is clearly in need of a property tax relief program.

TABLE I-3

UNTAPPED TAX CAPACITY, SELECTED STATES, 1970*

State	PERCENT INCREASE IN TAXES IF:		
	A+	B++	C+++
MASSACHUSETTS	16.9%	7.6%	12.2%
Connecticut	42.6	31.2	36.9
Maine	25.0	15.0	20.0
New Hampshire	89.3	74.1	81.7
New Jersey	41.6	30.5	36.0
New York	--	--	--
Rhode Island	27.3	17.7	22.2
Vermont	8.6	--	4.3
United States	39.1	19.5	29.3

\+ Tax rates were similar to those levied in New York.
++ Tax rates were similar to those levied in Vermont.
+++ Average of A+ and B++.

*John Shannon, "State Revenue Systems - How Do They Rate?" Remarks before the Southeast Leaders' Seminar on Educational Finance, Sea Island, Georgia, June 1972.

The relatively high tax effort status of Massachusetts is also borne out by other methods of measuring fiscal effort. The average financing system developed by the Advisory Commission on Intergovernmental Relations indicates that Massachusetts exhibits revenue effort 9 percent above national norms.[4] Its effort ranks it the 13th highest in the nation. Additionally, as Table I-6 shows, the State has higher than average effort in several categories of non-property and property taxes.

Massachusetts, then, does not have considerable fiscal capacity to finance school aid revisions, having tapped this capacity mainly for other purposes, such as welfare and community development. The State has relatively few resources to allocate to school finance reform both in an absolute and relative sense. That is, it can raise more money for schools but will have a total tax effort that is above regional norms.

1.4 Tax Burden

Of crucial concern to any school finance reform effort is the assessment of tax burden in a State-local fiscal system. There are two facets to the burden problem. One concerns the interstate burden problem and the other is the intrastate burden problem. On an interstate basis, recent research has indicated that Massachusetts evidently is able to "export" between 4 and 5 percent of its total State-local tax effort.[5] This is a lower export rate than either Connecticut, New York, and Rhode Island, yet a higher export rate than the other States in the region.

Massachusetts both exports less of its tax burden than some of its regional neighbors, and also relies less heavily on business taxes than most of the States in the region. In 1967, for example, 26.5 percent of all State-local taxes were levied on business, a share exceeded by four other regional

TABLE I-4

SELECTED ITEMS OF STATE AND LOCAL GOVERNMENT FINANCES,
PER $1,000 OF PERSONAL INCOME BY STATES, 1957*

State	General Revenue From Own Sources	Property Taxes	General Expenditure	Education Expenditure	Local School Only
MASSACHUSETTS	$ 99.66	$ 52.02	$ 123.95	$ 30.17	$ 27.98
Connecticut	81.38	35.72	113.36	32.64	28.86
Maine	100.94	44.24	120.10	35.95	29.68
New Hampshire	95.11	51.05	127.70	38.37	30.37
New Jersey	81.43	44.64	93.72	31.44	28.86
New York	104.95	43.10	116.99	34.80	33.08
Rhode Island	85.39	38.70	106.04	30.73	24.77
Vermont	115.86	46.45	144.73	49.13	36.73
Regional Total	95.59	44.49	N. A.	35.40	30.04
United States	98.42	36.89	N. A.	40.53	34.38

*U. S. Bureau of the Census, Governmental Finances, 1957.

TABLE I-5

SELECTED ITEMS OF STATE AND LOCAL GOVERNMENT FINANCES,
PER $1,000 OF PERSONAL INCOME BY STATES, 1970*

State	General Revenue Per $1,000 Of Personal Income		General Expenditure Per $1,000 Of Personal Income		
	All State And Local General Revenue Sources	Property Taxes	General Expenditure	Education	
				Total	Local Schools Only
MASSACHUSETTS	$ 142.29	$ 62.61	$ 172.27	$ 53.67	$ 42.10
Connecticut	124.26	52.46	149.22	56.58	44.71
Maine	148.07	57.78	183.48	70.81	50.32
New Hampshire	121.88	61.47	159.15	66.91	43.06
New Jersey	124.94	57.20	142.83	56.00	43.89
New York	172.10	53.17	206.06	68.51	52.78
Rhode Island	129.79	44.65	166.89	61.44	40.06
Vermont	174.02	51.17	225.84	91.36	50.09
Regional Total	142.16	55.06	175.80	65.66	45.88
United States	142.27	45.74	176.40	70.81	50.31

*U. S. Bureau of the Census, Governmental Finances, 1970.

TABLE I-6

MEASURES OF RELATIVE STATE-LOCAL TAX EFFORT IN INDIVIDUAL STATES, BY TYPE OF TAX: 1966-67
(PERCENT RELATION OF ACTUAL TAX REVENUE TO TAX CAPACITY ESTIMATED AT NATIONAL AVERAGE RATES)*

State	Index Of All Sales And Gross Receipts Taxes	Index Of All Property Taxes	Index Of Individual Income Taxes	Index Of All Other Taxes
MASSACHUSETTS	.73	1.41	1.49	.29
Connecticut	.95	1.10	--	.15
Maine	1.19	1.29	--	.61
New Hampshire	.59	1.22	.14	.87
New Jersey	.86	1.37	.04	.58
New York	1.17	1.25	2.74	.43
Rhode Island	1.15	1.16	--	.52
Vermont	.71	1.40	2.79	1.35

*Advisory Commission on Intergovernmental Relations, Measuring the Fiscal Capacity and Effort of State and Local Areas: Information Report, (Washington, D. C., 1971).

TABLE I-7

RELATIONSHIP OF STATE AND LOCAL TAXES ON BUSINESS
TO TOTAL STATE AND LOCAL TAXES, BY STATE,
1957, 1962, AND 1967*

State	Taxes on Business as a Percent of Total Taxes			
	1967	1962	1957	1957-1967 Percentage Change
MASSACHUSETTS	26.5%	31.0%	33.6%	-21.1%
Connecticut	31.4	34.3	32.6	- 3.7
Maine	25.0	26.2	28.9	-13.5
New Hampshire	25.5	28.0	31.8	-19.8
New Jersey	32.3	37.2	40.8	-20.8
New York	31.1	32.2	35.2	-11.6
Rhode Island	28.3	28.5	33.2	-14.8
Vermont	24.0	26.2	26.8	-10.4
United States	29.4	32.1	34.2	-14.0

*Advisory Commission on Intergovernmental Relations, State and Local Finance: Significant Features and Suggested Legislation.

States. Yet, even with a low share of its taxes being imposed on business sources, Massachusetts imposed relatively high taxes on business. In fact, its business tax rates are exceeded only by New York's.

Personal tax burden, again as measured by the representative taxing system, is above national and regional norms. Because of the State's income and residential property tax, its personal tax effort is higher than every State in the region except New York. And , as Table I-8 notes, its residential tax burden is considerably higher than national average.

In spite of this fact, business has a case for demanding greater non-property personal tax effort than the State-local system presently exhibits. Apparently, there are countervailing forces at work in the Massachusetts fiscal structure with respect to the distribution of personal tax effort. On the one hand, the State has low rates of personal tax effort in nonproperty taxes due to the lack of a truly broad-based sales tax. On the other hand, residential property taxes are among the highest in the country. Consequently, any redistribution of present personal tax burdens would most probably involve reducing residential property taxes but enacting a more broad-based sales and graduated income tax.

1.5 Assignment of State-Local Fiscal Responsibility.

Massachusetts' State-local fiscal system, like most of those in the region, is highly localized in nature. That is, it consistently places above-average revenue and expenditure responsibilities in its local government sector. What stands out about Massachusetts is that it has continued to maintain its highly localized public sector.

In 1957 the State raised 40.6 percent of all State-local tax revenues, and in 1970 it raised 49.2 percent of all revenues. Like other States in the region, it had increased its revenue raising responsibilities during that time period.

TABLE I-8

NONFARM RESIDENTIAL PROPERTY TAX EFFORT AS MEASURED
BY AVERAGE FINANCING METHOD, 1966-67*

State	Nonfarm Residential Property Tax Effort Index (Revenue Effort/Revenue Capacity)
MASSACHUSETTS	166
Connecticut	119
Maine	112
New Hampshire	139
New Jersey	176
New York	127
Rhode Island	130
Vermont	142

*Advisory Commission on Intergovernmental Relations, Measuring the Fiscal Capacity and Effort of State and Local Areas, (Washington, D. C., 1971).

Yet it still ranked sixth in the region.

During that same period it substantially decreased the expenditure responsibilities of its local governments. Thus, Massachusetts' local governments made 66.9 percent of all state-local expenditures in 1957, but by 1970 they made 50.8 percent of all such expenditures. Admittedly, Massachusetts still retained heavily localized public finance systems by 1970, yet it was beginning to assume considerably greater fiscal responsibility in its State-local system between 1957 and 1970. (See Table I-9)

When looking at the State-local fiscal system in its entirety and considering the relative effect of federal aid, the centralization of Massachusetts State finance becomes somewhat less pronounced. Between 1957 and 1970 the State share of total revenues from State, Federal, and local sources increased from 36.4 percent to 40.8 percent. Though local revenue raising responsibility also dropped from 56.3 percent to 43.4 percent during that time period, that decline was due in large measure to the increased proportion of federal aid in Massachusetts' State-local fiscal system. Federal aid rose from 7.2 percent of total State-local revenues to 15.8 percent of all State-local revenues between 1957 and 1970. (See Tables I-10 and I-11) Needless to say, every State experienced a greater share of Federal aid between 1957 and 1970, and this contributed significantly to the decrease of local revenue raising responsibilities during this period. It is doubtful that local governments would have had much lower revenue raising responsibilities than at present if it were not for increased Federal aid.

The high local fiscal assignment in Massachusetts should be of concern to those desiring to reform the State's school finance system. High local assignment creates several distinct problems for increasing school support. First, high local assignment means educational fiscal requirement will have to be

TABLE I-9

STATE GOVERNMENT PROPORTION OF SELECTED FISCAL ITEMS, 1957-1970*

State	1970		1957	
	Tax Revenues	Direct General Expenditures	Tax Revenues	Direct General Expenditures
MASSACHUSETTS	49.2%	45.7%	40.6%	33.1%
Connecticut	50.4	43.9	49.3	50.9
Maine	54.9	52.0	50.2	50.7
New Hampshire	38.5	48.5	38.2	49.3
New Jersey	41.5	30.2	28.3	25.1
New York	51.4	23.1	38.7	21.2
Rhode Island	59.0	53.1	48.1	45.8
Vermont	64.5	65.1	53.8	51.2
Regional Total	51.2	45.2	43.4	40.9
United States	55.2	37.1	50.4	26.6

*U. S. Bureau of the Census, Governmental Finances, 1957 and 1970.

judged against the strong competing demands of other expensive, labor-intensive local services such as police and fire protection. Secondly, high local assignment is a natural precondition for the creation of fiscal disparities in school support as it aggravates variations in local fiscal ability to support education. High local support, then, reduces the redistributive qualities of educational support programs. It also produces a natural incentive for intense local competition for taxable resources, and a corollary tendency for such resources to gravitate from poorer to more wealthy areas, which further exacerbates school finance disparities. Thus, a highly localized public sector may be expected to create undue variation in local school support and consequently result in aggregate undersupport of the education function.

1.6 State Revenue Structure.

Massachusetts takes only moderate fiscal responsibilities within its State-local fiscal system. Its revenue structure is in need of some revision if it is to furnish increasing revenues to local governments for educational and other purposes. While Massachusetts had a reasonably elastic tax structure between 1966 and 1970, fully 69 percent of all revenue increases at the State level were due to legislative action rather than economic growth.[6] The State has had to make rather numerous and extensive changes in its revenue structure to raise additional revenue. These changes may well have created considerable political unwillingness to further change tax rates in response to the need to provide more money for education.

There are at least three revenue problems that the State must tackle if it is going to be in a position to put more money into educational support. The first involves broadening the base of the current sales tax. The sales tax base in Massachusetts is about 57 percent of national average, and its definition of the sales tax base is markedly more restrictive than most of the other

States in the region. Table I-12 shows Massachusetts' sales tax base is only 81 percent of New Jersey's; 57 percent of Connecticut's; 53 percent of Rhode Island's; 49 percent of Maine's; and 47 percent of New York's. In other words, the State's nominal sales tax rate in 1970 was 3 percent; however its effective rate was only 1.7 percent, one of the lowest in the country.

The revenue effects of narrowly defining the sales tax base are substantial. For example, in 1970, Massachusetts, New York and Vermont all had 3 percent State sales tax rates. Yet, the three States raised widely varying amounts from this tax. Massachusetts, with the most restrictive definition of sales tax base, raised $29.61 per capita from the tax; New York, $55.63 per capita; and Vermont, $38.37 per capita. New York raised 88 percent more revenue from its sales tax than did Massachusetts. This practice of restricting the base of the sales tax makes it appear that there are high rates of sales taxation at the State level and frequently these rates are cited as reasons for not increasing revenue from this source. However, a more realistic definition of the tax base would lower nominal rates and ultimately permit the State to turn to this revenue source for increased educational money.

The second problem in Massachusetts concerns the personal income tax. This tax has been responsible for introducing a measure of progressivity in the State's overall fiscal system. Indeed, without the income tax, the State would have a far more regressive revenue structure than it now has with the predominance of the local property tax. Nonetheless, experience in other States indicates that Massachusetts might well retain its elastic revenue structure and still have more progression in its income tax. At least three States having more elastic revenue structures than Massachusetts--Wisconsin, Oregon, and New York--make heavier use of the personal income tax and have more progressive income tax structures. Another three, Minnesota, Vermont,

TABLE I-10

ORIGIN AND ALLOCATION OF STATE-LOCAL REVENUE, 1957*

State	Percent of Revenue Raised At			Percent of Revenue Spent At	
	Federal Level	State Level	Local Level	State Level	Local Level
MASSACHUSETTS	7.2%	36.4%	56 3%	24.1%	75.9%
Connecticut	5.4	46.0	48.6	43.5	56.5
Maine	12.1	45.6	42.4	51.0	49.0
New Hampshire	9.3	36.5	54.2	42.5	57.5
New Jersey	4.6	28.9	66.5	24.6	75.4
New York	5.5	34.3	60.2	18.8	81.2
Rhode Island	12.2	42.0	45.8	43.6	56.4
Vermont	13.1	47.5	39.4	50.2	49.8
Regional Total	8.7	39.6	51.7	37.3	62.7
United States	10.1	43.1	46.8	34.5	65.5

*U. S. Bureau of the Census, Governmental Finances, 1957.

TABLE I-11

ORIGIN AND ALLOCATION OF STATE-LOCAL REVENUE, 1970*

State	Percent of Revenue Raised At			Percent of Revenue Spent At	
	Federal Level	State Level	Local Level	State Level	Local Level
MASSACHUSETTS	15.8%	40.8%	43.4%	44.3%	55.6%
Connecticut	13.0	44.3	42.6	44.0	55.9
Maine	18.2	46.6	35.1	53.3	46.6
New Hampshire	17.4	35.3	47.2	47.0	52.9
New Jersey	12.3	37.1	50.4	32.1	67.8
New York	13.6	42.5	43.7	23.2	76.7
Rhode Island	20.4	48.3	31.1	55.2	44.7
Vermont	22.6	51.5	25.8	64.1	35.8
Regional Total	16.7	43.3	39.9	45.4	54.5
United States	16.7	43.9	39.3	38.8	61.1

*U. S. Bureau of the Census, Governmental Finances, 1970.

TABLE I-12

RELATIVE BASES AND RATES OF STATE GENERAL SALES TAXES*

State	Ratio of Actual to Standard Base, 1967	Nominal Rate January, 1971	"True" Effective Rate, 1971
MASSACHUSETTS	0.57	3.0%	1.7%
Connecticut	1.00	5.0	5.0
New York	1.20	3.0	3.6
Maine	1.17	5.0	5.9
Rhode Island	1.07	5.0	5.4
New Jersey	0.70	3.0	2.1
Vermont	N. A.	N. A.	N. A.
New Hampshire	N. A.	N. A.	N. A.

*Advisory Commission on Intergovernmental Relations, State-Local Revenue Systems and Educational Finance, (Washington, D. C., 1971).

and Hawaii have elasticity ratings that are comparable to Massachusetts but rely more on the income tax and progressive rate structures. All the aforementioned States are either as urbanized as Massachusetts or as high-spending as the State. Both these facts suggest that Massachusetts could well afford to put more graduation in her income tax than now presently exists. (See Table I-13)

The solution to the third problem concerns reduced reliance on the local property tax. Massachusetts ranked fifth among all States in 1969-1970 as to its property tax effort with an effective rate of 6.3 percent of income. The excessive reliance on the property tax poses a dual problem for the State. First, it is one of the most regressive taxes in the State-local revenue structure and; second, it is one of the least elastic. Consequently, heavy use of the tax creates marked tax burdens among the lower and middle income classes, and its inelasticity creates the need for continuous rate increases on the property tax base. Both characteristics are factors which call for reduced use of the tax in the Massachusetts revenue structure.

Still, one must not ignore the fact that the property tax is one of the three main instruments of State-local finance. As such, its total replacement is neither wise nor desirable. What is called for, then, is a gradual reduction in the use of the property tax in the overall revenue structure - an approach favored by the Massachusetts Master Tax Commission. The State should simultaneously use measures such as "circuit breakers" which provide tax relief for low-income families and individuals. These last measures are in effect in eleven States, three in the Northeast region. Additionally, the State might provide for more local nonproperty taxation than it does now and which is presently provided for in such States as Alabama, California, Maryland, New York, and Pennsylvania.

TABLE I-13

COMPARATIVE STATE REVENUE SYSTEMS, SELECTED CHARACTERISTICS, 1970*

State	"Elasticity"[1]	Individual Income Tax Effort Per $1000 Income	Effective Income Tax Rates[2]		
			$5,000	$10,000	$25,000
Hawaii	1.17%	$ 34.32	-0.4%	2.9%	5.0%
MASSACHUSETTS	1.20	22.80	0.2	2.2	3.1
Minnesota	1.17	25.71	2.0	4.1	5.6
New York	1.22	30.80	0.5	2.1	5.0
Oregon	1.29	29.34	1.4	3.1	4.9
Vermont	1.14	30.62	1.0	2.8	4.4
Wisconsin	1.41	31.86	2.3	3.9	5.7

1/ Percent Change in State tax revenues created by one percent change in personal income in the State.

2/ Tax Rates are for Family of four at various levels of Adjusted Gross Income.

*Advisory Commission on Intergovernmental Relations, State and Local Finance: Significant Features and Suggested Legislation.

The need for a more broad-based sales tax, the construction of a more graduated income tax, and less reliance on the property tax are all measures that would place the State of Massachusetts in a better position to meet educational revenue requirements in the future.

1.7 Local Revenue Structure.

As of 1970, over 85 percent of all Massachusetts local revenues were derived from the property tax. Thus, outside of limited use of charges, assessments, and license fees, Massachusetts local finance hinges mainly on the workings of the property tax. The high level of use of this tax raises the question of how well the property tax is administered and its consequent impact on educational finance.

Heavy local reliance on the property tax must be considered a factor in the State's school finance problems. First, the extreme variation in local taxable property wealth is staggering. Brookline, one of the wealthiest districts in the State, has a tax base which is 3.3 times that of Hanover, a medium wealth suburb, and 9.3 times that of Ayer, an urban fringe community. Even neighboring communities feel significant wealth disparities. While Somerville has a tax base of just over $15,000 per pupil, nearby Everett has a tax base of just over $40,000 per pupil.

The extreme variation in wealth has also been complemented by other factors which indicate that the local property tax is poorly administered in the State. Table I-14 shows underassessment of residential property in 24 of the 38 cases. In 5 of 9 cases underassessment of residences in relation to industrial property is also shown. The degree of underassessment is substantial. Residences exhibited assessment ratios that were 50 percent less than commercial properties in twelve cases; 25 percent less in two of

nine cases; and 100 percent less in one case. There are also cases of severe commercial property underassessment. In ten cases, commercial properties were underassessed by 25 percent, and in three cases by 100 percent. Clearly, there were widespread differential assessments by class of property in Massachusetts in 1970.

Differential assessments in Massachusetts related to the value as well as class of property. A review of assessment ratios in 73 Massachusetts communities reveals that underassessment of high value properties occurred in 37 cases or 51 percent of all instances. Similarly, overassessment of low value properties occurred in 31 cases or 42 percent of total. Both of these tendencies add to the regressive features of the tax by adding to the fiscal burden of lower income taxpayers.

Value related differential assessments frequently went in the opposite direction. In 49 percent of the cases studied, high value properties were overassessed relative to all other properties. In 58 percent of all cases, low value properties were underassessed relative to all other properties. In all, 19 communities were found both to underassess high value properties and overassess low value properties. On the other hand, 24 communities overassessed high value properties and underassessed low value properties. The remaining communities had mixed patterns of value-related differential assessments.

Massachusetts' local revenue structure appears in need of substantial reform. The need for general property tax relief is obvious. This general need is emphasized by patterns of class and value-related differential assessments. These latter practices have deleterious effects on local finances. Underassessment of residences and low-value properties, while being understandable from the viewpoint of redistribution of local tax burden, is in the long run apt to exacerbate fiscal disparities among Massachusetts communities as

TABLE I-14

DIFFERENTIAL ASSESSMENTS BY PROPERTY CLASS*

	Single Family Residences in Relation To:	
	Commercial Property	Industrial Property
Underassessed By:		
1-20 Percent	9	3
20 Percent or More	15	2
Overassessed By:		
1-50 Percent	9	3
50 Percent or More	5	1
Total	38	9

*U. S. Bureau of the Census, unpublished data. This data should be interpreted with some caution due to the small number of commercial and industrial properties sampled in jurisdictions with less than 50,000 population.

the high-value business tax base moves from discriminatory to nondiscriminatory community. Moreover, while differential assessment of the above type may be considered rational political behavior, the overall rate of Massachusetts local property taxation is so high that there is need for substantial general property tax relief. There is room for considerably greater equity in the distribution of Massachusetts tax burdens. Reliance on more nonproperty revenue sources will substantially raise the elasticity of the local revenue structure.

1.8 Intergovernmental Aid Systems.

Another factor affecting the dynamics of school finance centers on the character of external aid systems within a particular State-local fiscal system. A State with an extensive system of intergovernmental aid may ease the problem of municipal overburden and thereby free up local resources for education or a State may wish to channel most of its intergovernmental aid in the education function and thereby free local governments from extreme fiscal pressure in their need to meet varied educational fiscal requirements. Or the converse may be true in either case, thereby making it harder to raise resources for education.

In assessing Massachusetts' total aid structure on these grounds, one finds that the level of total per capita intergovernmental transfers has dropped drastically between 1957 and 1970. The State is consistently one of the lowest spenders on educational aid, and education has always had to compete with numerous other functions for the State intergovernmental aid dollar. (See Tables I-16 and I-17)

In 1957 the State spent $52.68 per capita for intergovernmental aid purposes, a level 22 percent above national average. By 1970, the State spent $78.82 per capita for State aid or 45 percent below national average. In both

TABLE I-15

DIFFERENTIAL ASSESSMENTS BY VALUE CLASS*

High Value Properties	N	Low Value Properties
"Overassessed"	24 (33%)	"Underassessed"
"Overassessed"	12 (16%)	"Overassessed"
"Underassessed"	18 (25%)	"Underassessed"
"Underassessed"	19 (26%)	"Overassessed"
Total	73 (100%)	

*U. S. Bureau of the Census, unpublished data. This data should be interpreted with some caution due to the small number of commercial and industrial properties sampled in jurisdictions with less than 50,000 population.

time periods, however, the State's per capita educational aid expenditure was always 60 percent below the national average. Even though the State assumed a larger share of overall revenue raising responsibility and even though it assumed full financing of welfare, it did not take the opportunity to raise its level of educational intergovernmental aid. Rather, it chose to have above average intergovernmental aid flows in such functions as housing and urban renewal, airports, libraries, and a substantial program of general unconditional aid to local governments. The effect of minimal support for State educational aid can be noted in the fact that as of 1970 Massachusetts accounted for only 20 percent of all school revenue in the State. Only two States, New Hampshire and South Dakota, devoted proportionately less resources to education than did Massachusetts.

An analysis of Federal aid indicates that the impact of such monies have increased substantially in Massachusetts since 1957. By 1970, Federal aid was 15.8 percent of all State-local revenue and was the second largest source of revenue after the local property tax. The major impact of Federal aid, however, has been in the fields of highways and welfare rather than education. As of 1970, Federal aid represented 39.7 percent of all welfare expenditures and 21.1 percent of all highway expenditures in the State. By sharp contrast, Federal aid constituted only 8.6 percent of local school outlays and only 3.7 percent of health and hospital expenditures within the State.

Viewed in another light, it is evident that Massachusetts' status as a high-income State will insure that it receives less revenue flows from the Federal government than it supplies. Using estimates derived by I. M. Labovitz[7] in 1968, it appears that Massachusetts put 11 percent more revenue into the Federal system than it received in return from the national government. Even though this represents a relative drain on the State-local revenue system,

TABLE I-16

SELECTED CHARACTERISTICS, STATE AID SYSTEMS, 1957*

State	Per Capita State Intergovernmental Expenditures			Intergovernmental Expenditures as % of Total State Expenditures
	Total	Education	Education as % of Total	
MASSACHUSETTS	$ 52.68	$ 10.96	20.8%	35.3%
Connecticut	16.77	13.57	80.9	9.3
Maine	14.94	9.24	61.8	12.6
New Hampshire	7.81	3.67	47.0	6.2
New Jersey	22.23	14.42	64.9	27.2
New York	57.35	30.10	52.5	47.6
Rhode Island	18.73	7.75	41.4	16.3
Vermont	26.67	14.46	54.2	17.5
United States	43.16	24.12	55.9	34.7

*U. S. Bureau of the Census, Governmental Finances, 1957.

TABLE I-17

SELECTED CHARACTERISTICS, STATE AID SYSTEMS, 1970*

State	Per Capita State Intergovernmental Expenditures			Intergovernmental Expenditures as % of Total State Expenditures
	Total	Education	Education as % of Total	
MASSACHUSETTS	$ 78.82	$ 46.66	59.2%	20.0%
Connecticut	105.64	84.68	80.2	26.2
Maine	88.82	78.85	88.8	23.6
New Hampshire	25.42	16.55	65.1	8.9
New Jersey	120.84	53.77	44.5	39.8
New York	292.24	133.12	45.6	57.7
Rhode Island	86.30	63.28	73.3	20.8
Vermont	109.52	90.07	82.2	18.8
United States	142.73	84.40	59.1	37.2

*U. S. Bureau of the Census, Governmental Finances, 1970.

other States which are about as wealthy as Massachusetts fare worse in this regard. For every dollar New York pays to the national government it receives 62¢ in return. New Jersey, Pennsylvania, and all the States from Ohio through Minnesota receive similarly small returns. Table I-18 indicates these various ratios.

The net effect of Federal and State intergovernmental aid systems has not been to relieve local expenditure problems. Federal aid in Massachusetts is exceeded by larger Federal revenue liabilities, and State aid has always been a low proportion of local educational expenditure. Both external aid mechanisms which could have been used to ameliorate educational fiscal disparities have not done so to date.

1.9 Fiscal Support for Education.

As already mentioned, the bulk of support for educational expenditures comes from the local sector in Massachusetts. While the level of State participation in educational finance has increased since 1930 from 9.5 percent to 20.0 percent in 1970, the overall level of State support has remained constant since about 1950.

Though the State does not vigorously participate in educational finance, it does channel its modest State aid in a form that recognizes variations both in educational need and local fiscal capacity. For example, in 1968-69, Massachusetts distributed 97 percent of its support in a form which recognized (1) educational need or (2) fiscal capacity or (3) both. Contrast this 97 percent Massachusetts aid figure with that of the national average of 77 percent.

While Massachusetts has a form of equalizing aid system, its underfunding of that program permits the State to have a school support system that is disequalizing in practice. As noted by the National Educational Finance Project, Massachusetts ranked 33 among all States in its equalization performance.

TABLE I-18

RATIO OF FEDERAL PAYMENTS TO FEDERAL REVENUES ORIGINATING IN THE STATE: FISCAL YEARS 1952-67
PERCENT OF TOTAL ALLOCATED EXPENDITURES DIVIDED BY PERCENT OF TOTAL ALLOCATED REVENUE*

State	1965-67	1952
MASSACHUSETTS	90	74
California	132	106
Connecticut	92	86
Georgia	152	140
Maine	114	96
New Hampshire	83	65
New Jersey	71	90
New York	62	61
Rhode Island	117	68
Vermont	111	71
Wisconsin	67	85

*U. S. Senate Committee on Government Operations, Federal Aid to States and Regions, 1965-67, (Washington, D. C., 1968).

Indeed, 6 of the 7 other States that had a State aid program in the form of Massachusetts' had higher equalization scores as of 1970. Massachusetts has a State aid vehicle which could put substantial equalization into its school finance system. However, it simply chooses not to use it.

1.10 Conclusion.

Massachusetts needs to reform its educational support system. Yet it is not educational finance alone that needs revision. Clearly other pressing fiscal reforms are needed too; and, if enacted, will make educational finance reform an easier task. Only by viewing educational finance revision as part of this larger effort can Massachusetts adopt a comprehensive school finance reform program.

CHAPTER I, FOOTNOTES

1/ Joel S. Berke, et. al., Financing Equal Educational Opportunity, (Berkeley: McCutchan Press, 1972).

2/ Seymour Sacks, City Schools/Suburban Schools: A History of Fiscal Conflict, (Syracuse: Syracuse University Press, 1972).

3/ Advisory Commission on Intergovernmental Relations, Measuring the Fiscal Capacity and Effort of State and Local Areas, (Washington: ACIR, 1971).

> In simple terms the "average financing approach" simply indicates what a State or local area could raise in revenues if it taxed its various tax bases at national average rates. In essence, then, the average financing approach reveals areas where fiscal capacity is undertapped or overtapped.

4/ Elliot Morse, Interstate Fiscal Comparison, unpublished manuscript. See also Donald Phares, Equity in State-Local Taxation: An Interstate Analysis, Proceedings of the Sixty-Fourth National Tax Conference,(Kansas City, Missouri, September, 1971).

5/ ACIR, op. cit.

6/ Advisory Commission on Intergovernmental Relations (ACIR), State-Local Finances: Significant Features and Suggested Legislation, (Washington: ACIR, 1972).

7/ U. S. Senate Committee on Government Operations, Federal Aid to States and Regions, 1965-67, (Washington: Government Printing Office, 1969).

CHAPTER II

MASSACHUSETTS' SCHOOL FINANCE SYSTEM: A DETAILED ANALYSIS

School finance requirements hinge on a number of factors including need, fiscal ability, and fiscal effort. Ideally, a school finance system should allow local preferences to determine the level of educational support in a given area without such choice being unduly affected by extreme variations in educational need or fiscal ability.

Consequently, the total operation of a school support system should emphasize the following characteristics: First, educational support should be directed to those areas with excessive concentrations of educational need. Second, educational support should take into account variations in fiscal capacity, not permitting deficient fiscal capacity to stand in the way of adequate educational support.

Other factors suggest themselves. Cost differentials, for example, might be cause for differentiated State support. Although a much debated point, State support might be geared to variations in total tax effort as it is in Michigan, or school tax effort, as it is in New York State.

The aggregate effect of these relationships is to compensate for differentials in educational need, educational cost, fiscal capacity and fiscal effort which can frequently result in diminished local school support.

2.1 The Existing School Finance System.

Before analyzing the nature of State educational support in Massachusetts, it is important to look at the relationships of a number of variables--educational need, fiscal capacity, and fiscal effort--which frequently are determinants of local educational support. The following analysis assesses

the aggregate relationships among these characteristics and suggests the empirical dimensions of these relationships through analysis of 25 "illustrative" districts in Massachusetts.[1]

Looking at measures of educational need, one finds sharp differences in the proportions of Aid to Families with Dependent Children (AFDC) students among the sample districts. In central cities the percent of average daily membership classified as children of AFDC recipients ranges from a high of 31 percent in New Bedford and a low of 6 percent in Boston. In marked contrast, most suburban districts have less than 5 percent of their students in such a category. Only Ashland and Somerville have over 5 percent of their pupils in AFDC status. Independent communities frequently have 7 percent of their students in welfare status. This percentage is illustrative of the educational burden for urbanized districts. The rural sample districts, with the exception of Sturbridge, do not have the poverty problem of central or independent city districts. (See Table II-1)

Measuring the proportions of poor families reveals another dimension of disadvantage facing the urbanized districts. Central cities have from 7.1 percent (Worcester) to 11.9 percent (New Bedford) of their families in poverty status. The average proportion of poor families in central cities exceeds 9 percent. Of the ten suburban districts sampled, only three (Westport, Millbury, and Somerville) had concentrations of poor families above 5 percent. Most suburban districts ranged between 3.5 and 4.5 percent of their families in poverty status. Independent communities were similar to central cities in their extent of familial poverty while rural areas appeared more like suburbs.

Not only do central cities have greater concentrations of poor than other districts, but they also have lower concentrations of wealthy families. Worcester has 20.6 percent of its families earning over $15,000. This percentage

TABLE II-1

SELECTED POPULATION CHARACTERISTICS BY
SCHOOL DISTRICT TYPE, 1970

District Type and Name	Number of Inhabitants	Number of School Age Inhabitants	ADM	Number of AFDC Children
Central City				
Boston	641,071	131,119	97,574	5,989
Lawrence	66,915	14,664	10,175	895
New Bedford	101,777	22,263	17,156	5,422
Springfield	163,905	39,618	31,188	3,623
Worcester	176,572	38,551	31,035	2,645
Rapid Growth Suburban				
Ashland	8,882	2,698	2,505	257
Hingham	18,845	5,948	5,380	116
Millbury	11,987	3,087	2,642	122
North Andover	16,284	3,994	3,111	48
Westport	9,791	2,587	2,088	96
Slow Growth Suburban				
Andover	23,695	6,979	6,029	141
Arlington	53,524	11,651	9,610	278
Easthampton	13,012	3,086	2,369	56
Somerville	88,779	8,654	13,432	853
Whitman	13,059	3,625	3,417	158
Independent Communities				
Amherst	26,331	3,291	3,192	34
Greenfield	18,116	4,211	3,764	160
Holyoke	50;112	11,816	9,137	729
Lynn	90,294	19,820	15,552	1,497
Quincy	87,966	19,757	16,735	1,203
Rural				
Gardner	19,748	4,271	3,078	94
Groveland	5,382	1,718	1,561	60
Halifax	3,537	994	941	N. A.
Sturbridge	4,878	1,359	1,296	171
Whately	1,145	252	246	17

is only half as great as Hingham and Andover which have over 45 percent of their families earning $15,000 or more.

On the average, then, central cities frequently have two and a half times the proportion of poor families and less than half the porportion of wealthy families than suburban areas. Independent communities have poverty levels similar to central cities but are still able to retain fairly high proportions of high-income families. Rural areas tend to exhibit income distribution features that are similar to suburbs in the State. (See Table II-2)

The aforementioned wealth characteristics indicate that central cities and selected independent communities face a dual problem in raising higher levels of local school support. On the one hand, they have high concentrations of poverty bringing about the requirement for greater educational outlays to meet the needs of these pupils. On the other hand, urban areas lack the proportion of wealthy population from which a local redistribution of wealth could take place. The result is that school tax burdens in urban areas would almost invariably fall on the middle class which increasingly has less ability to bear the full costs of funding compensatory programs for the disadvantaged. This being the case, central city school tax rates and school tax levels (per pupil or per capita amounts of school taxes) are frequently lower than those in more affluent suburban districts.

Disparities in income distribution are frequently reflected in the taxable wealth which is available to fund local educational programs. Per pupil taxable property value in the five central cities studied averaged about $21,200 per pupil. In rapid growth suburbs it averaged $25,500 per pupil; $27,800 in slow growth suburbs; $27,200 in independent communities; and $23,700 in rural districts. Individual comparisons were even more striking. Arlington, for example, had a tax base that was 78 percent greater than Boston's, while Andover had a tax base that was 35 percent greater than that of Lawrence.

When taxable wealth is measured on a per capita rather than on a per pupil basis, wealth disparities become even more pronounced. In per capita terms, central cities have less fiscal capacity with which to finance their public service needs. These cities averaged $3,500 per capita in taxable property wealth by which to finance all their public services. Independent communities and rural areas average $4,700 and $5,500 respectively in their per capita taxable property wealth.

The per pupil property wealth figures highlight a shortcoming in the way in which fiscal capacity is measured in most educational finance programs. Measured on a per pupil basis, central cities have taxable property wealth that is 20 and 31 percent less than rapid and slow growth suburbs respectively. Taken in per capita terms, central city fiscal capacity is 49 to 71 percent less than suburban areas. Even when measuring wealth on the basis of per capita income, central city wealth is 12 to 17 percent less than suburban areas. The effect, then, of measuring educational fiscal capacity in per pupil terms is to overstate the wealth of central cities, independent communities and rural areas in relation to both rapid and slow growth suburbs. The use of property values rather than income as a wealth measure works to the disadvantage of independent communities and rural areas which have greater fiscal capacity in property wealth rather than personal income. Central cities, due to the high proportion of tax-exempt property in their jurisdiction, have relatively more fiscal capacity in personal income rather than taxable property. (See Table II-3)

Therefore, the urban school districts (central city and independent communities) are caught in a two-way squeeze in the current educational finance situation. First, they have a high level of educational need, which create requirements to meet high-cost compensatory education programs. Second, central cities and frequently independent communities have only moderate or low fiscal capacity by which to generate required educational funds. By contrast, most

TABLE II-2

FAMILY INCOME DISPARITIES BY SCHOOL DISTRICT TYPE, 1970

District Type and Name	ADM	% Families With Revenue Less Than Poverty Level	% Families With $15,000 or More
Central City			
Boston	97,574	11.7%	18.1%
Lawrence	10,175	8.7	16.6
New Bedford	17,156	11.9	11.6
Springfield	31,188	9.6	16.9
Worcester	31,035	7.1	20.6
Rapid Growth Suburban			
Ashland	2,505	3.7	27.3
Hingham	5,380	3.6	45.6
Millbury	2,642	6.1	18.7
North Andover	3,111	3.5	29.7
Westport	2,088	6.5	14.3
Slow Growth Suburban			
Andover	6,029	3.3	46.6
Arlington	9,610	4.1	32.6
Easthampton	2,369	4.8	18.8
Somerville	13,432	7.5	16.5
Whitman	3,417	3.9	21.8
Independent Communities			
Amherst	3,192	6.4	33.2
Greenfield	3,764	6.0	20.1
Holyoke	9,137	10.6	17.5
Lynn	15,522	8.4	18.0
Quincy	16,735	5.1	25.8
Rural			
Gardner	3,078	5.8	18.7
Groveland	1,561	2.1	26.3
Halifax	941	4.3	13.9
Sturbridge	1,296	0.8	27.0
Whately	246	N. A.	N. A.

TABLE II-3

SELECTED TAXABLE WEALTH CHARACTERISTICS BY
SCHOOL DISTRICT TYPE, 1970

District Type and Name	ADM	Per Pupil Equalized Net Property Value	Per Capita Equalized Net Property Value	Per Capita Income
Central City				
Boston	97,574	$ 20,500	$ 3,100	$ 3,099
Lawrence	10,175	24,600	3,700	3,198
New Bedford	17,156	19,800	3,300	2,694
Springfield	31,188	20,300	3,900	2,982
Worcester	31,035	21,200	3,700	3,242
Rapid Growth Suburban				
Ashland	2,505	20,800	5,900	3,234
Hingham	5,380	26,200	7,500	4,251
Millbury	2,642	18,900	4,200	3,073
North Andover	3,111	33,100	6,300	3,611
Westport	2,088	28,700	6,100	2,842
Slow Growth Suburban				
Andover	6,029	33,200	8,400	4,458
Arlington	9,610	36,500	6,600	3,992
Easthampton	2,369	29,600	5,400	3,286
Somerville	13,432	23,100	3,500	2,989
Whitman	3,417	16,700	4,400	3,081
Independent Communities				
Amherst	3,192	26,600	3,200	2,787
Greenfield	3,764	25,200	5,200	3,283
Holyoke	9,137	24,000	4,400	2,933
Lynn	15,522	31,600	5,400	3,074
Quincy	16,735	28,700	5,500	3,488
Rural				
Gardner	3,078	27,000	4,200	3,126
Groveland	1,561	14,700	4,300	3,228
Halifax	941	19,700	5,200	2,787
Sturbridge	1,296	28,500	7,600	3,629
Whately	246	28,500	6,100	N. A.

non-urban school districts have comparatively less need and comparatively more wealth with which to finance their educational needs. In short, there is a classic inversion of needs and resources in the State's system of local educational support.

A key factor in a school finance system is the relationship between educational need and fiscal effort. Data from the 25 sample districts indicates that (1) high-need districts frequently have relatively low school tax rates but high total tax rates while (2) low-need districts generally have higher school tax rates and lower total tax rates than central cities. Consequently, large city districts rarely allocate more than 45 percent of their tax revenues to schools, whereas suburban areas frequently allocate between 55 to 70 percent of their revenues for schools.

The argument is often heard that urban districts, particularly central cities, have a lower tax effort for education because they value noneducational services more. However, as the poverty statistics indicate, central and independent communities have public service requirements that are considerably greater than surrounding suburbs. As a direct consequence of these additional services, central cities have higher total tax rates than their suburbs. Cities are being asked to increase their tax effort for schools at a time when their willingness to raise money for public services far exceeds that of their suburban counterparts. Indeed, the raising of local school taxes would even further exacerbate the tax rate differentials between city and suburb, thereby increasing the shift of taxable resources from poor to rich communities. (See Table II-4)

Tax rate data also shows the desperate fiscal plight that various suburban jurisdictions find themselves in. Data from Table II-4 and II-5 reveals that many suburban districts find themselves at a comparative fiscal disadvantage under the present system of financing Massachusetts schools. Although

Ashland and Hingham raise relatively similar amounts of total per pupil revenue, Ashland's school tax rate is $4 per $1,000 full-value higher than Hingham's. Similarly, Millbury and North Andover raise roughly comparable amounts of per pupil revenue though the former community's school tax rate is $6 per $1,000 full-value higher than the latter's. In this last case, North Andover raises nearly $35 per pupil with each $1 per $1,000 full-value tax effort while Millbury raises only $21 per pupil with each $1 per $1,000 full-value tax effort. If Millbury had North Andover's tax rate, Millbury would raise about $135 less per pupil than it does now. If North Andover had a school tax rate at Millbury's level, North Andover would raise $229 per pupil more than it now does. Similar inequalities can also be noted between the sample communities of Andover, Arlington, Somerville and Whitman.

In summary, there is not a one-to-one relationship between school tax effort and educational need. This condition of disparity affects not only the large cities of the State but the relatively poor suburbs as well. Central cities with high total tax demands cannot provide additional tax effort for schools. Many suburban districts cannot compete with their wealthier neighbors who either have (1) similar school expenditures but lower school tax rates or (2) similar school tax rates but higher per pupil expenditures. Because of these foregoing disparities, districts such as Hingham, Andover, North Andover, and Arlington invariably fare better than Boston, New Bedford, Millbury, Somerville and Whitman.

What of the relationships between the background variables--wealth, need, effort--and school expenditure outcomes? Turning first to the relationships between wealth and expenditures, one finds a positive association between wealth and total current revenues and total current expenditures per pupil. Thus, wealth endowment does serve to increase school expenditures. Wealth-

TABLE II-4

SELECTED TAX EFFORT CHARACTERISTICS
BY SCHOOL DISTRICT TYPE, 1970

District Type and Name	ADM	Computed			
		School Tax Rate/$1000 Equal. Value	Total Tax Rate/$1000 Equal. Value	School as % of Total	Reported * School Tax as a %
Central City					
Boston	97,574	$ 33.55	$141.24	23.7%	20%
Lawrence	10,175	26.65	62.93	42.3	25
New Bedford	17,156	27.11	72.06	37.6	33
Springfield	31,188	32.37	68.36	47.4	43
Worcester	31,035	33.70	86.67	38.9	38
Rapid Growth Suburban					
Ashland	2,505	36.45	50.73	71.8	57
Hingham	5,380	32.24	50.59	63.7	51
Millbury	2,642	29.60	51.55	57.4	40
North Andover	3,111	23.03	39.24	58.7	47
Westport	2,587	29.43	43.13	68.2	55
Slow Growth Suburban					
Andover	6,029	32.31	45.15	71.5	59
Arlington	9,610	23.07	50.99	45.2	51
Easthampton	2,369	21.99	39.40	55.8	47
Somerville	13,432	23.15	78.87	29.4	28
Whitman	3,417	19.52	49.50	39.4	42
Independent Communities					
Amherst	3,192	26.44	34.50	76.6	63
Greenfield	3,764	25.12	46.00	54.6	42
Holyoke	9,137	21.46	55.92	38.4	33
Lynn	15,522	19.92	60.47	32.9	33
Quincy	16,735	27.01	62.47	43.2	41
Rural					
Gardner	3,078	21.05	48.50	43.4	39
Groveland	1,561	41.30	48.03	86.0	72
Halifax	941	26.38	34.00	77.8	62
Sturbridge	1,296	24.98	38.00	65.7	59
Whately	246	27.61	34.94	79.0	68

*As reported by Massachusetts Teachers' Association; discrepancies arise due to what is considered local tax revenue for schools.

expenditure differentials seem most pronounced among suburbs, and between selected suburbs and selected central cities. Hingham, the wealthiest fast growth suburb, raised $273 more per pupil local revenue than Millbury, the poorest suburb of that type. In similar fashion, Andover raised $654 more local and $555 more total per pupil revenue than Whitman, the poorest slow growth suburb, and it also raised $410 more local and $350 more total per pupil revenue than Lawrence, a nearby central city. (See Table II-5)

When considering the interrelationship between wealth and State aid, the partially equalizing character of the Massachusetts educational aid program is evident. For example, it is evident that Millbury receives more State aid than Hingham and that Whitman and Lawrence received more aid than Andover. However, that aid is still not sufficient to offset the expenditure differentials among these communities. Given the fact that between 63 and 86 percent of all school revenues in the sample districts come from local sources, it is not surprising that State aid cannot offset local school finance disparities. (See Table II-6) While Federal aid can frequently be channeled to districts in the form that would offset disparities, it is still a relatively minor source of most school revenues.

What of the relationship between need and expenditure outcome? Data from the sample school districts indicates that there are a number of high-need communities that are consistently among the lowest expenditure districts. New Bedford, Somerville, and Holyoke are districts that have high concentrations of need, low to moderate fiscal capacity, and low levels of per pupil expenditure. Some communities with high need and low or moderate fiscal capacity still exhibit expenditure patterns that are comparable to the more affluent suburban districts. Boston and Worcester are cases in point. While all the aforementioned districts generally receive above-average amounts of State aid per

TABLE II-5

SELECTED REVENUE CHARACTERISTICS BY
SCHOOL DISTRICT TYPE, 1970

District Type and Name	ADM	Per Pupil Amounts			
		Total Current Revenue	State Aid	Federal Aid	Local Revenue
Central City					
Boston	97,574	$ 1,054	$ 259	$ 87	$ 708
Lawrence	10,175	926	204	51	671
New Bedford	17,156	825	201	75	549
Springfield	31,188	997	234	87	676
Worcester	31,035	1,074	264	92	718
Rapid Growth Suburban					
Ashland	2,505	1,082	240	40	802
Hingham	5,380	1,096	184	27	885
Millbury	2,642	903	260	31	612
North Andover	3,111	948	112	31	805
Westport	2,088	1,053	146	36	971
Slow Growth Suburban					
Andover	6,029	1,276	155	40	1,081
Arlington	9,610	994	110	26	858
Easthampton	2,369	970	207	32	731
Somerville	13,432	868	251	65	552
Whitman	3,417	721	260	34	427
Independent Communities					
Amherst	3,192	1,249	166	24	1,059
Greenfield	3,764	1,017	159	17	841
Holyoke	9,137	809	191	67	551
Lynn	15,522	911	140	152	619
Quincy	16,735	1,122	197	83	842
Rural					
Gardner	3,078	809	182	19	608
Groveland	1,561	922	274	56	592
Halifax	941	1,029	243	35	751
Sturbridge	1,296	956	186	9	761
Whately	246	1,014	184	15	815

pupil, only the latter two use this money to better compete with suburban districts. It should also be noted that the school tax rates in Boston and Worcester are considerably higher than in New Bedford, Somerville, and Holyoke. Indeed, school tax rates in Boston and Worcester frequently exceed those in the more affluent suburban districts. Other high-need communities are trying to raise additional monies for education, partly from increased State aid and partly from increased local tax effort. Massachusetts State aid, therefore, does not fully offset educational need differentials; and high-need communities must frequently exert higher school tax effort to meet their educational need requirements.

Finally, one must look at the relationship between school, total tax effort, and expenditure outcome. There are findings that indicate that educational expenditures outcomes are not fully explained by school tax effort and that expenditures sometimes are affected by high total tax effort in a community.

Tables II-4 and II-7 show that some high total tax rate communities (New Bedford and Somerville) do not raise high levels of per pupil expenditure. Indeed, within almost every school district typology, the school district with the highest proportion of taxes going to noneducational functions has the lowest level of per pupil expenditure. A notable exception being Boston. In most cases, then, high total tax effort caused by municipal overburden prevents the local community from raising more money for schools. At the same time this high total tax effort does not gain for the community additional State funds to offset this overburden.

Further, the school support system consistently produced expenditure and tax disparities among its school districts. Springfield, Hingham, and Andover have almost identical school tax rates. However, Hingham spends nearly $100 more in total current expenditure per pupil; and Andover spends over $200 per pupil more in current expenditures than did Springfield. In like manner,

TABLE II-6

SELECTED REVENUE SOURCE CHARACTERISTICS
BY SCHOOL DISTRICT TYPE, 1970

District Type and Name	ADM	Percent From Local	Percent From State	Percent From Federal
Central City				
Boston	97,574	67.2%	24.6%	8.2%
Lawrence	10,175	72.5	22.0	5.5
New Bedford	17,156	66.8	24.4	8.8
Springfield	31,188	67.8	23.5	8.7
Worcester	31,035	66.8	24.6	8.6
Rapid Growth Suburban				
Ashland	2,505	74.0	22.3	3.7
Hingham	5,380	79.6	16.8	3.6
Millbury	2,642	67.7	28.9	3.4
North Andover	3,111	84.9	11.8	3.3
Westport	2,587	82.7	13.9	3.4
Slow Growth Suburban				
Andover	6,029	86.1	12.1	1.8
Arlington	9,610	85.9	11.2	2.9
Easthampton	2,369	74.9	21.3	3.8
Somerville	13,432	63.6	28.9	7.5
Whitman	3,417	57.4	37.7	4.9
Independent Communities				
Amherst	3,192	84.6	13.3	2.1
Greenfield	3,764	78.4	15.6	6.0
Holyoke	9,137	68.1	23.6	8.3
Lynn	15,522	67.9	15.4	16.7
Quincy	16,735	75.0	17.6	7.4
Rural				
Gardner	3,078	73.7	22.5	3.8
Groveland	1,561	69.0	29.7	1.3
Halifax	941	76.0	23.6	0.4
Sturbridge	1,296	79.7	19.4	0.9
Whately	246	80.4	18.1	1.5

TABLE II-7

SELECTED CURRENT EXPENDITURE CHARACTERISTICS
BY SCHOOL DISTRICT TYPE, 1970

District Type and Name	ADM	Per Pupil Expenditure		
		Total Current	Instructional	Transportation
Central City				
Boston	97,574	$ 1,032	$ 711	$ 15
Lawrence	10,175	904	532	10
New Bedford	17,156	782	530	13
Springfield	31,188	924	594	37
Worcester	31,035	1,005	689	22
Rapid Growth Suburban				
Ashland	2,505	918	619	37
Hingham	5,380	1,015	730	36
Millbury	2,642	845	549	37
North Andover	3,111	879	582	16
Westport	2,088	866	555	57
Slow Growth Suburban				
Andover	6,029	1,136	769	42
Arlington	9,610	965	704	5
Easthampton	2,369	925	587	51
Somerville	13,432	842	571	5
Whitman	3,417	852	420	18
Independent Communities				
Amherst	3,192	1,153	370	48
Greenfield	3,764	928	631	14
Holyoke	9,137	738	470	16
Lynn	15,522	833	539	13
Quincy	16,735	1,067	791	9
Rural				
Gardner	3,078	794	559	18
Groveland	1,561	868	286	32
Halifax	941	1,008	343	76
Sturbridge	1,296	918	324	61
Whately	246	1,002	320	61

Springfield, Easthampton, and Sturbridge spend nearly identical expenditures for total current purposes. Yet, Sturbridge's school tax rate is $9.50 per $1000 full-value lower than Springfield's; and Easthampton is over $10 per $1000 full-value lower than Springfield. In this example, Springfield's tax rates are higher than suburban communities though expenditure levels are substantially lower. Thus, Springfield and many other similar districts are in a "heads you lose and tails we win" condition. These districts must compete on the expenditure side and raise taxes to even higher levels or, they must compete on the tax side and reduce their level of educational expenditure. In either case, they operate at a comparative fiscal disadvantage with regard to other districts.

In summary, the system of Massachusetts school support is in need of substantial overhaul. School support is almost always directly related to local wealth, and frequently inversely related to educational need and total or school tax effort. Communities that are poor, have high concentrations of educational need, and have high total tax effort simply cannot afford the high levels of educational expenditure required of them. Those communities that make the attempt (Boston and Worcester are examples) have total local tax rates that are among the very highest in the State. Still other high expenditure communities frequently have high levels of fiscal capacity, low concentrations of educational need, but only moderate to low tax rates. These latter communities are ones that can choose either to (1) have high levels of school expenditure with only average tax rates or (2) moderate levels of school expenditure with below-average tax rates. Freed of municipal overburden or of the need for compensatory education, these districts have a comparative fiscal advantage over most of the other districts in the State.

A more equitable school finance program will be discussed in Chapter III.

CHAPTER II, FOOTNOTES

1/ Central cities are those districts which are at the core of a Standard Metropolitan Statistical Area.

Rapid growth suburban districts are those lying outside the central city of a given metropolitan area which had a 1960-70 growth rate that was above the average for all suburban localities in that metropolitan area.

Slow growth suburban districts are those lying outside the central city of a given metropolitan area which had a 1960-70 growth rate that was below the average for all suburban localities in that metropolitan area.

Independent communities are (1) those urban districts of more than 15,000 population lying outside metropolitan areas, or (2) those "satellite city" districts having more than 50,000 population that are outside the central cities.

Rural districts are those non-urbanized low-density districts outside metropolitan areas.

CHAPTER III

SIMULATIONS OF FISCALLY NEUTRAL SYSTEMS OF FINANCE

3.1 Introduction.

Presently, school expenditure and tax rates are largely determined by factors of local wealth rather than the wealth of the State as a whole. Consequently, the finance system has produced serious fiscal disparities which prevent adequate educational support in a number of the Commonwealth's communities. In this chapter, attention will be devoted to the ways, means, and consequences of abolishing this system and turning to one which is both equitable and fiscally neutral.

An equitable and fiscally neutral system of school finance is one in which there is a correlation between tax effort and revenue yield. There are several alternative methods which Massachusetts might adopt in order to abolish the blatant disparities and inequities in its present system of financing schools. These methods vary in the degree by which they divide taxing and spending responsibilities between State and local government.

One method, full State funding, assigns all principal taxing and spending decisions to the State, leaving local districts with minor "housekeeping" responsibilities. It is apparent, however, that important political and administrative considerations make full State funding undesirable or impractical as means of restructuring school finance in Massachusetts. Full State funding violates the Commonwealth's unusually strong sentiment for local home rule.

Another method, full local funding, assigns all taxing and spending initiatives to local gove t. However, this method can only eliminate disparities if it is coupled with massive redrawing of school boundaries or extensive interlocal transfer payments. Full local funding would rarely win

widespread approval and would require extensive monitoring by the State or some other supra-local agency.

Between these two extremes are diverse methods of joint State-local funding which require the State to equalize disparities among local districts.

Joint State-local funding avoids the shortcomings of the aforementioned alternatives and it has the political advantage of already being in existence, albeit in a form that is not fiscally neutral. Joint funding is an abstract idea and cannot be considered as a means to achieving fiscal neutrality except in terms of specific policy instruments and goals.

Under joint funding, there are two ways to eliminate inter-district tax and expenditure disparities: (1) power equalization[1] and (2) variable or percentage equalization.

Power equalization eliminates tax and expenditure disparities by guaranteeing to every school district a given local tax yield for any tax rate that the community desires to impose on itself. Under power equalization, differences in district revenues (as the President's Commission on School Finance points out) "would not depend on their respective tax bases but on the rates at which (communities) chose to tax themselves."[2]

Under variable or percentage equalization, however, district revenues are equalized with respect to the relationship between local and State fiscal capacity. Wealth becomes inversely related to State aid under this distribution system.

3.2 The Most Desirable Means of Joint Funding.

Both of the aforementioned joint funding policies can be used to ameliorate tax and expenditure disparities in school finance.

However, power equalization takes a narrow definition of fiscal neutrality--the relationship between school tax effort and school revenue yields. Conse-

quently, it cannot be as easily modified to take into account differentials in educational costs, needs, and total tax effort. Power equalization also retains modest local reliance on the property tax which is already extremely burdensome in Massachusetts.

In contrast, variable equalization would permit Massachusetts to drastically overhaul its burdensome and unpopular property tax. It would also permit the State to deal with problems of disparities in educational need and municipal overburden. Finally, variable equalization of a fiscally neutral sort could be instituted without any undue reorganization of local school districts, though some action along these lines may be desirable.

To be constitutional, variable equalization will possibly have to be considered in conjunction with some State imposed ceilings on local taxing and spending. Further, there will be some difficulty in reaching a political concensus as to what constitutes taxable wealth or fiscal capacity. However, as the latter part of this chapter will suggest there are ways to surmount these problems and thereby revise the Commonwealth's present system of school finance.

3.3 Questions About Variable Equalization.

Given the disparities in Massachusetts' present school finance system, it is obvious that any fiscally neutral variable equalization system would require a considerable redistribution of expenditures and revenues. This prospect raises several basic questions:

1. Would equitable variable equalization cost more tax dollars than the present system?
2. Would variable equalization impose greater tax burdens on some cities and towns than on others?
3. Would variable equalization result in increased expenditures in some school districts but reduced expenditures in others?
4. Would it be possible to finance variable equalization through a State income or sales tax with rate structures which might be politically feasible?

3.4 Simulating the Effects of Variable Equalization.

Throughout the remainder of this chapter, we will provide answers to the aforementioned questions through an analysis of nine variable equalization aid models. All models share a basic aid formula familiar to students of school finance. The formula is:

$$\text{Aid} = \text{Local Expenditure Level} \times \text{State Support Fraction} \times \frac{\text{State Fiscal Capacity}}{\text{Local Fiscal Capacity}}$$

This formula requires the State to support local school expenditures at some standard of expenditure level and at some level of average State sharing. This sharing, in turn, varies depending upon whether local fiscal capacity is above or below the State average.

In addition to sharing a basic aid formula, all nine simulation models assume two things: First, that the State government will provide 90 percent of all local school revenue for districts having average fiscal capacity; and second, that school districts will be prohibited from taxing and spending at any level that exceeds the State pupil unit average by greater than 10 percent. This insures that no district will spend more than 110 percent of the level of expenditure upon which the State bases its aid formula.

These assumptions are necessary for the following reasons. First, if any variable equalization scheme were to fund less than 90 percent of education costs in school districts of average fiscal capacity, considerable fiscal pressure might remain on the local property tax. Second, if any variable equalization scheme placed no constraints on local taxing and spending, it would almost certainly be both exceedingly costly and self-defeating. Third, if any variable equalization system did not allow for individual pupil differences in terms of pupil units or similarly weighted base, it would deny

the possibility of cost, tax, and need differentials in public school support.

3.5 Fiscal Capacity Definitions in the Simulation Models.

Although all nine simulation models require a high level of State funding, each uses a different definition of fiscal capacity. Every definition of fiscal capacity differs in the way in which it measures school district wealth and/or school district educational need. Consequently, all have inherent biases which will alter the amount of State aid received under a variable equalization finance system.

Model One defines fiscal capacity as the ratio of local to State equalized property valuation per pupil. The principal biases of this definition are two-fold. First, it assumes that property wealth is indicative of wealth in general. This is not the case, however, in school districts having an unusually large or small amount of nonresidential property wealth. A second bias of this definition is that it weighs all pupils equally and does not deal with the problems of districts which have a great number of students with learning disabilities or districts which have relatively high fixed operating costs. Therefore, this model only partially measures fiscal capacity and can be highly variable due to differences in pupil enrollments.

Fiscal capacity in Model Two is defined as the ratio of local to State equalized property value per capita. This definition will result in distortions in fiscal capacity whenever there is a significant divergence between real property values and income. Further, this model makes state aid contingent upon the total ability of school district inhabitants to finance public services. This model also does not consider individual pupil differences in calculating State aid.

Model Three defines fiscal capacity as the ratio of local to State income per pupil; Model Four, fiscal capacity as the ratio of local to State income per

capita. These models, then, will result in greater equity whenever income wealth is higher than property wealth. Inequities will occur whenever income wealth is unusually low in relation to property wealth.

Models Five and Six treat fiscal capacity as a subjective function of wealth. More specifically, Model Five defines fiscal capacity as the relationship of local to State school tax effort. Model Six measures fiscal capacity as the relationship of local total tax effort to State average total tax effort. Model Five will channel above-average aid to districts that make a relatively high school tax effort, regardless of their taxable wealth. Similarly, in Model Six extraordinary aid flows to those school districts which have high total tax effort and which frequently suffer from severe problems of municipal overburden.

Models Seven and Eight are hybrids of earlier models. Model Seven defines fiscal capacity as the ratio of local to State real property valuation per ADM weighted by the ratio of local to State average school tax effort. This formula insures that additional State aid will be directed to school districts which both are poor and are making a relatively high property tax effort. Conversely, districts that are property rich and exert low school tax effort will receive below-average amounts of assistance. Model Eight is similar to Model Seven and defines fiscal capacity as the total tax effort weighted by the ratio of local to State equalized property value per pupil in ADM. This definition of fiscal capacity permits us to deal with the problem of municipal overburden. Under this formula, school districts with high total tax effort burdens will receive considerable State aid and consequently will be able to use such aid to raise their level of educational expenditure.

Finally, Model Nine defines fiscal capacity in the same manner as Model One; but it double counts all pupils from families eligible to receive assis-

tance from the AFDC (Aid to Families with Dependent Children) program. Unlike other definitions of fiscal capacity, this model acknowledges the fact that pupils from economically deprived households tend to have special and more costly educational needs than those pupils from other households.

We now turn to a discussion of revenue, expenditure, and tax implications of our nine variable equalization finance models. Our discussion is based on a computer simulation analysis of data pertaining to the school finances of Massachusetts school districts operating during the 1970-71 fiscal year.

3.6 Variable Equalization and School Revenue.

The revenue effects of our nine variable equalization models can be gauged, in part, through an examination of the fiscal capacity indices resulting from each of the fiscal capacity definitions. A summary of these indices for several different types of school districts is contained in Table III-1. This summary indicates quite clearly that the revenue effects of any variable equalization finance system would depend in large measure upon its definition of fiscal capacity.

Central cities would benefit from having aid formulas that would use per capita rather than per pupil measures and would especially benefit from aid formulas that considered total tax effort or educational need, as measured by AFDC pupils. Suburban areas benefit from the use of a property value wealth measure while central city and rural districts tend to be property poor yet income wealthy, possibly as a result of the tax exemption problem in the districts studied. Rural and rapid growth suburbs benefit from school tax effort weighted measures while central and independent communities gain from a total tax effort weighted formula. In effect, then, central cities gain from Models II, VI, and IX; rapid growth suburbs, from Models III and V; slow growth suburbs, from Model IV; independent communities, from Models II and VI; and

rural school districts, from Model IV.

Thus far, we have seen that the redistributive impact of any variable equalization system will depend on its definition of fiscal capacity. Now we will describe the amount of current revenue from State sources that would be received by various types of school districts under each of the simulated models. We assume that Massachusetts' current per pupil expenditure ceilings were set at the 10th, 50th, 65th, 75th, and 90th percentile per pupil current revenue levels of the 1970-71 fiscal year. These levels are respectively, $567, $731, $798, $863, and $1,072 per ADM.

Table III-2 shows that all nine variable equalization aid formulas would leave all sample Massachusetts school districts with more current revenue from State sources than they received during 1970-71. Assuming the 10th percentile expenditure level were in effect, aid would expand between 78 to 110 percent for all the models under consideration; at the 50th percentile level, aid increases approximately 200 percent. At the 65th and 75th percentile ceiling, State aid increases 235 and 270 percent respectively; and at the 90th percentile level, aid under all the variable equalization models increases over 350 percent.

Although all school districts would receive more current revenue from State sources under each model than at present, Tables III-2 and III-3 clearly show that each of the variable equalization models tend to benefit some school district types more than others. Model V', for example, is most beneficial to independent communities and least so to slow growth suburbs. In similar fashion, Model IX is most favorable to central cities and rural areas and less favorable to slow growth suburbs. Yet some models channel monies to school districts without notable variation. For example, Model II does not produce more than a $70 variation between types of districts, barring the relatively lower amounts of aid directed to slow growth suburbs. Indeed, all the aid

TABLE III-1

SELECTED FISCAL CAPACITY INDICES BY MODEL
AND SCHOOL DISTRICT TYPE

District Type and Name	Model I Index	Model II Index	Model III Index	Model IV Index	Model V Index
Central City					
Boston	.78	.57	1.35	1.11	.84
Lawrence	.94	.69	1.22	.80	1.06
New Bedford	.76	.61	.96	.80	1.03
Springfield	.78	.71	.92	.87	.88
Worcester	.81	.68	1.06	1.05	.84
Rapid Growth Suburban					
Ashland	.79	1.08	.67	1.00	.75
Hingham	1.00	1.37	.95	1.40	.86
Millbury	.72	.77	.76	.84	.90
North Andover	1.26	1.16	1.10	.96	1.18
Westport	1.10	1.13	.98	.86	.94
Slow Growth Suburban					
Andover	1.27	1.55	.93	1.20	.86
Arlington	1.39	1.20	1.32	1.24	1.23
Easthampton	1.13	.99	.97	.96	1.25
Somerville	.88	.64	1.11	.90	1.20
Whitman	.64	.80	.83	1.17	1.13
Independent Community					
Amherst	1.02	.59	.94	.57	.73
Greenfield	.96	.96	.93	1.04	.94
Holyoke	.91	.80	1.26	1.20	1.26
Lynn	1.21	1.00	1.05	.96	1.38
Quincy	1.09	1.00	1.06	1.08	1.00
Rural					
Gardner	1.03	.77	1.16	.98	1.30
Groveland	.56	.79	.95	.82	.67
Halifax	.75	.96	1.02	.80	.73
Sturbridge	1.09	1.39	.91	1.31	1.08
Whately	1.09	1.12	.73	1.00	1.01

TABLE III-1 (continued)

SELECTED FISCAL CAPACITY INDICES BY MODEL
AND SCHOOL DISTRICT TYPE

District Type and Name	Model VI Index	Model VII Index	Model VIII Index	Model IX Index
Central City				
Boston	.41	.81	.60	.78
Lawrence	.93	1.00	.93	.91
New Bedford	.82	.89	.79	.60
Springfield	.86	.83	.82	.73
Worcester	.68	.83	.75	.78
Rapid Growth Suburban				
Ashland	1.14	.77	.97	.76
Hingham	1.12	.93	1.08	1.03
Millbury	1.11	.81	.92	.73
North Andover	1.44	1.22	1.35	1.31
Westport	1.31	1.02	1.20	1.10
Slow Growth Suburban				
Andover	1.24	1.06	1.25	1.30
Arlington	1.17	1.31	1.28	1.43
Easthampton	1.44	1.19	1.29	1.16
Somerville	.76	1.04	.82	.87
Whitman	.97	.88	.80	.84
Independent Community				
Amherst	1.09	.87	1.05	1.06
Greenfield	1.11	.95	1.04	.97
Holyoke	1.08	1.09	1.00	.89
Lynn	1.00	1.30	1.10	1.16
Quincy	.91	1.05	1.00	1.08
Rural				
Gardner	1.05	1.17	1.04	1.05
Groveland	1.16	.62	.86	.57
Halifax	1.21	.74	.98	.79
Sturbridge	1.45	1.09	1.27	1.01
Whately	1.72	1.05	1.40	1.07

TABLE III-2

ADDITIONAL AID PER PUPIL AT SELECTED CURRENT EXPENDITURE LEVELS
BY MODEL AND SCHOOL DISTRICT TYPE

District Type and Model	ADDITIONAL AID PER PUPIL AT SELECTED CURRENT EXPENDITURE LEVELS				
	10th %-tile	50th %-tile	65th %-tile	75th %-tile	90th %-tile
Central City					
I	$ 311	$ 460	$ 521	$ 580	$ 766
II	320	472	534	595	783
III	302	449	509	568	750
IV	313	463	524	584	770
V	304	453	513	572	755
VI	312	462	523	583	769
VII	308	456	517	576	760
VIII	311	461	522	582	767
IX	362	526	593	658	862
Rapid Growth Suburban					
I	310	458	518	577	761
II	297	442	500	558	737
III	316	465	526	586	772
IV	301	447	506	564	744
V	314	464	525	584	770
VI	298	442	501	559	738
VII	312	461	521	581	765
VIII	304	450	510	568	750
IX	324	477	538	599	788
Slow Growth Suburban					
I	309	458	518	577	762
II	304	451	511	570	752
III	309	457	518	577	761
IV	306	454	514	573	756
V	308	457	517	576	760
VI	297	442	501	559	739
VII	309	457	518	577	761
VIII	303	449	510	568	750
IX	329	483	546	608	799

TABLE III-2 (continued)

ADDITIONAL AID PER PUPIL AT SELECTED CURRENT EXPENDITURE LEVELS
BY MODEL AND SCHOOL DISTRICT TYPE

District Type and Model	ADDITIONAL AID PER PUPIL AT SELECTED CURRENT EXPENDITURE LEVELS				
	10th %-tile	50th %-tile	65th %-tile	75th %-tile	90th %-tile
Independent Community					
I	$ 326	$ 476	$ 537	$ 597	$ 783
II	331	483	544	605	793
III	325	475	536	596	781
IV	329	480	541	602	789
V	324	473	534	594	779
VI	320	468	528	588	771
VII	325	475	536	595	781
VIII	323	472	533	592	777
IX	346	502	565	627	820
Rural					
I	270	412	469	526	701
II	260	399	455	510	682
III	305	458	519	580	768
IV	305	457	518	579	767
V	272	414	472	529	705
VI	259	397	453	509	680
VII	271	413	471	527	703
VIII	265	405	461	517	691
IX	290	437	497	556	738

TABLE III-3

ADDITIONAL STATE AID AT THE 90TH PERCENTILE EXPENDITURE LEVEL
BY MODEL AND DISTRICT TYPE
(Per Pupil Amounts)

District Type and Name	Model I	Model II	Model III	Model IV	Model V
Central City					
Boston	$ 725	$ 747	$ 665	$ 690	$ 719
Lawrence	764	791	734	779	751
New Bedford	786	801	765	782	757
Springfield	756	764	742	837	746
Worcester	853	867	827	828	850
Rapid Growth Suburban					
Ashland	743	713	756	721	747
Hingham	777	737	782	735	792
Millbury	731	726	727	718	711
North Andover	821	832	839	854	830
Westport	805	802	817	830	821
Slow Growth Suburban					
Andover	778	748	814	785	821
Arlington	809	829	817	825	827
Easthampton	740	755	757	758	727
Somerville	723	748	698	720	688
Whitman	740	722	719	682	687
Independent Community					
Amherst	794	839	802	842	825
Greenfield	806	806	810	798	809
Holyoke	779	791	742	749	742
Lynn	799	821	816	825	780
Quincy	754	764	758	755	764
Rural					
Gardner	776	804	762	782	747
Groveland	734	710	692	706	722
Halifax	746	722	716	740	747
Sturbridge	766	733	785	742	766
Whately	768	764	806	777	776

TABLE III-3 (continued)

ADDITIONAL STATE AID AT THE 90TH PERCENTILE EXPENDITURE LEVEL
BY MODEL AND DISTRICT TYPE
(Per Pupil Amounts)

District Type and Name	Model VI	Model VII	Model VIII	Model IX
Central City				
Boston	$ 765	$ 722	$ 745	$ 780
Lawrence	765	757	764	853
New Bedford	779	772	783	1120
Springfield	748	751	752	876
Worcester	867	852	860	940
Rapid Growth Suburban				
Ashland	706	745	724	848
Hingham	760	785	769	794
Millbury	689	721	710	776
North Andover	803	826	812	831
Westport	782	813	794	848
Slow Growth Suburban				
Andover	780	800	779	796
Arlington	833	818	821	832
Easthampton	707	734	724	759
Somerville	736	705	729	786
Whitman	704	713	722	785
Independent Community				
Amherst	786	809	790	800
Greenfield	791	808	798	846
Holyoke	762	761	771	860
Lynn	821	790	810	895
Quincy	773	759	764	825
Rural				
Gardner	774	762	775	803
Groveland	670	728	702	772
Halifax	696	746	720	741
Sturbridge	727	766	747	901
Whately	701	772	734	836

formulas tested indicate that most State aid should be redistributed from slow growth, wealthy suburbs to other school districts in the State, most notably the rapid growth suburbs.

Our data indicates that all but a small number of school districts in Massachusetts would receive substantial increases in State aid under each of the variable equalization models considered. This is so even when the per pupil current expenditure ceiling is set at the 10th percentile level.

Though these models redistribute school aid among school districts in different ways and in ways more beneficial to some districts more than others, it is more likely that political support for or opposition to a given new formula of school finance would be influenced more by the gains or losses communities anticipate with respect to the present State-local financial system.

Table III-4 shows the per pupil revenue gap or surplus between State-local revenue in 1970-71 and the amount of State aid that selected districts would receive if the current expenditure ceiling were set at the 10th, 50th, 65th, 75th, and 90th percentile levels. This table, though limited to a summary of Model One's effects, demonstrates an important fact which emerges from our analysis of all nine variable equalization models; namely, that it would be necessary to set the per pupil expenditure ceiling at the 90th percentile level if a majority of school districts were to receive State aid in amounts that exceeded 1970-71 State-local revenues.

Even though setting the per pupil expenditure ceiling at the 90th percentile level would yield State aid in amounts that exceed the present State-local revenue yields of most Massachusetts school districts, it would leave some districts with considerable revenue deficits. These districts in the main are suburban or exurban ones, but as Table III-5 notes they are not located exclusively in such places. Under variable equalization Model Three, for example, Boston would have a revenue deficit of $45 per pupil while Quincy, a

TABLE III-4

1970-71 STATE-LOCAL REVENUE LESS SIMULATED STATE AID AT SELECTED EXPENDITURE LEVELS BY SCHOOL DISTRICT TYPE FOR VARIABLE EQUALIZATION MODEL I
(Per Pupil Amounts)

District Type and Name	10th %-tile Ceiling	50th %-tile Ceiling	65th %-tile Ceiling	75th %-tile Ceiling	90th %-tile Ceiling
Central City					
Boston	$ 442	$ 290	$ 229	$ 168	$- 20
Lawrence	360	211	151	91	- 94
New Bedford	235	83	21	- 40	-228
Springfield	376	224	162	102	- 87
Worcester	338	187	125	65	-123
Rapid Growth Suburban					
Ashland	519	367	306	245	57
Hingham	560	412	351	292	108
Millbury	342	189	127	66	-124
North Andover	431	287	229	171	- 7
Westport	525	378	319	260	78
Slow Growth Suburban					
Andover	777	633	575	517	339
Arlington	486	344	287	230	54
Easthampton	390	244	184	126	- 55
Somerville	290	139	78	18	-168
Whitman	159	5	- 59	-120	-311
Independent Community					
Amherst	716	569	508	449	266
Greenfield	427	279	218	159	- 26
Holyoke	225	75	14	- 46	-231
Lynn	305	160	101	43	-136
Quincy	527	380	320	262	80
Rural					
Gardner	274	126	66	7	-176
Groveland	375	219	156	94	- 99
Halifax	496	344	282	221	32
Sturbridge	443	296	237	178	- 4
Whately	493	347	287	228	46

TABLE III-5

SIMULATED STATE AID AT THE 90TH PERCENTILE EXPENDITURE LEVEL
LESS 1970-71 STATE-LOCAL REVENUE BY VARIABLE EQUALIZATION MODEL
AND SCHOOL DISTRICT TYPE

District Type and Name	Model I	Model II	Model III	Model IV	Model V
Central City					
Boston	$ 20	$ 43	$- 40	$- 15	$ 14
Lawrence	94	121	64	109	81
New Bedford	228	244	207	224	199
Springfield	87	94	72	167	76
Worcester	123	136	96	97	119
Rapid Growth Suburban					
Ashland	- 57	- 87	- 44	- 79	- 53
Hingham	-108	-148	-103	-151	- 93
Millbury	124	119	120	112	104
North Andover	7	18	25	40	16
Westport	- 78	- 81	- 65	- 52	- 62
Slow Growth Suburban					
Andover	-339	-369	-303	-332	-296
Arlington	- 54	- 34	- 46	- 38	- 36
Easthampton	55	70	72	73	42
Somerville	168	194	143	166	133
Whitman	311	293	290	254	258
Independent Community					
Amherst	-266	-220	-258	-218	-235
Greenfield	26	26	29	17	29
Holyoke	231	243	194	200	193
Lynn	136	158	153	162	117
Quincy	- 80	- 70	- 76	- 78	- 69
Rural					
Gardner	176	204	162	182	147
Groveland	99	75	57	71	87
Halifax	- 32	- 55	- 61	- 38	- 30
Sturbridge	4	- 29	23	- 42	4
Whately	- 46	- 50	- 70	- 30	- 38

TABLE III-5 (continued)

SIMULATED STATE AID AT THE 90TH PERCENTILE EXPENDITURE LEVEL
LESS 1970-71 STATE-LOCAL REVENUE BY VARIABLE EQUALIZATION MODEL
AND SCHOOL DISTRICT TYPE

District Type and Name	Model VI	Model VII	Model VIII	Model IX
Central City				
Boston	$ 60	$ 17	$ 40	$ 81
Lawrence	95	87	95	183
New Bedford	272	214	225	562
Springfield	78	81	82	206
Worcester	136	121	130	209
Rapid Growth Suburban				
Ashland	- 94	- 55	- 76	48
Hingham	-125	-101	-117	- 91
Millbury	82	114	103	169
North Andover	- 11	12	- 2	17
Westport	-100	- 70	- 89	- 35
Slow Growth Suburban				
Andover	-336	-317	-338	-321
Arlington	- 30	- 45	- 42	- 31
Easthampton	22	49	38	74
Somerville	181	151	175	231
Whitman	276	285	293	357
Independent Community				
Amherst	-273	-250	-269	-260
Greenfield	10	27	18	66
Holyoke	214	212	222	311
Lynn	158	127	147	232
Quincy	- 60	- 75	- 70	- 9
Rural				
Gardner	174	162	175	203
Groveland	35	93	67	137
Halifax	- 82	- 31	- 57	- 36
Sturbridge	- 35	4	- 15	139
Whately	-114	- 42	- 80	22

satellite city of Boston, would have a deficit of $80 per pupil.

3.7 Variable Equalization and School Expenditures.

Thus far, we have considered the implications of variable equalization for current school district revenues. We now turn to examine its ramifications for current expenditures. Our discussion will deal with two closely related expenditure questions: (1) defining expenditure equity in school finance, and (2) the need to "level down" some district expenditures to meet variable equalization expenditure ceilings.

At the outset of this chapter, we indicated that variable equalization cannot result in fiscal equity unless it involves, in addition to high State support, limits to current expenditures per pupil unit. Curbing expenditures on a per pupil unit basis, however, raises two very difficult political issues: (1) defining pupil units or dealing with the problem of vertical equity, and (2) levelling down school district expenditures or coping with the problem of horizontal equity.

It is never very difficult, of course, to obtain support for the notion of vertical equity in school services, the idea that unequal pupils should be the recipients of unequal educational resources. It is always problematic, however, to obtain support for the idea at the point of drafting school legislation.

School finance literature generally supports two criteria for establishing vertical equity on the expenditure side of the budget: (1) inequalities in fixed district costs resulting from school district structure and location, and (2) inequalities in the learning capacity of students that are either inherent or the product of the social environment. We have not attempted to take the former criterion into account in our simulation analysis for the simple reason that it raises questions sufficient for several studies in themselves.

Like the fixed cost criterion for vertical equity, the educational need

criterion is difficult to define and to apply in dealing with the problem of achieving vertical equity in educational expenditures. In lieu of public State-wide testing data, there seems to be a growing concensus among educators, economists, and many lawmakers that Aid to Families with Dependent Children (AFDC) measures are an acceptable proxy for determining educational need. For this reason we have attempted to ascertain to what extent Massachusetts school districts would be able to increase their per pupil expenditures over and above the per pupil unit expenditure ceilings we used in analyzing the revenue effects of variable equalization.

Table III-6 shows both the per pupil and AFDC weighted pupil unit current expenditure levels for the sample Massachusetts school districts. The figures suggest that central cities and selected rapid growth suburbs (Ashland) and independent communities (Lynn) could add to their expenditure levels even more when using an AFDC weighted per pupil current expenditure basis because of their relatively high concentrations of educational need. Therefore, they would not be affected by any expenditure ceilings that might accompany School Finance Reform in the State.

In order to obtain some idea about the rollback problem in Massachusetts, we examined the current expenditures of the State's highest spending districts. Table III-7 lists in descending order all Massachusetts districts over 1,000 pupils having per pupil expenditures greater than $1,179 or 110 percent of the 90th percentile expenditure ceiling. Except for Cambridge, all the districts are considerably above-average in wealth and are either suburban or exurban. Of the twelve districts requiring rollbacks, four would require less than a $100 per pupil rollback, the other eight (mainly suburbs in Middlesex County) would require considerably greater rollbacks. The problem of implementing these roll-backs will be dealt with in the recommendations in the concluding chapter.

TABLE III-6

PER PUPIL AND AFDC-UNIT CURRENT EXPENDITURE
BY SCHOOL DISTRICT TYPE, 1970

District Type and Name	Current Expenditure Per Pupil	AFDC-Weighted Expenditure
Central City		
Boston	$ 930	$ 876
Lawrence	904	831
New Bedford	782	594
Springfield	924	828
Worcester	1,005	926
Rapid Growth Suburban		
Ashland	918	833
Hingham	1,015	994
Millbury	845	808
North Andover	879	866
Westport	866	828
Slow Growth Suburban		
Andover	1,135	1,110
Arlington	965	938
Easthampton	925	904
Somerville	624	586
Whitman	852	814
Independent Community		
Amherst	1,153	1,140
Greenfield	928	890
Holyoke	739	684
Lynn	833	760
Quincy	1,067	995
Rural		
Gardner	794	770
Groveland	868	836
Halifax	1,008	958
Sturbridge	919	812
Whately	1,002	937

TABLE III-7

SCHOOL DISTRICTS* IN 1970-71 WITH CURRENT EXPENDITURES PER PUPIL GREATER THAN THE 90TH PERCENTILE LEVEL

School District	Current Expenditure Per Pupil	Current Expenditure AFDC Weighted Per Pupil Unit	Expenditure Reduction Needed to Reach Expenditure Level
Brookline	$ 1,563	$ 1,486	$ 307
Weston	1,475	1,475	296
Sharon	1,465	1,439	260
Lincoln	1,440	1,440	259
Cambridge	1,418	1,271	92
Dover	1,360	1,360	181
Newton	1,354	1,319	140
Wellesley	1,354	1,309	130
Sherborn	1,322	1,322	143
Harwich	1,315	1,187	8
Concord	1,214	1,214	35
Wayland	1,198	1,198	19

*School districts with greater than 1,000 ADM that are over the expenditure level. In the sample there were twelve other small districts that were over the expenditure limit; their high costs, however, may be related to diseconomies of scale rather than wealth factors.

3.8 Variable Equalization and School Taxes.

We shall now consider the impact of variable equalization on school taxes. Regardless of the degree to which these educational aid formulas create more fiscal equity in the existing system of school finance, Massachusetts taxpayers like those elsewhere will be prone to judge these system's efficacy on the basis of their effect on local property taxes. This is not to say that Massachusetts taxpayers have low regard for educational needs or fiscal equity, but simply to underscore the fact that citizens tend to judge any part of a public budget in terms of taxes. It is inherently easier to recognize public education's private tax costs than it is to identify either its private or social benefits.

Since we have assumed that Massachusetts should finance public education through a joint State-local system, we can now examine the tax cost of our variable equalization formulas in terms of local school districts and the State as a whole. In any school district, the taxes necessary to support the local share of public education will vary with two factors: (1) the amount of State aid received under the desired variable equalization formula, and (2) the degree to which citizens elect to spend up to the maximum level allowed by the law.

Table III-8 shows the local tax levels, per $1,000 full value assessment, that would be necessary to eliminate the gap between the level of school district State-local current revenue in 1970-71. In the same vein, Table III-9 shows the local property tax rates, per $1,000 full value assessment, that would be required to eliminate the difference between 110 percent of the 90th percentile expenditure ceiling.

First and foremost, these tables show that any of our variable equalization models could permit a drastic reduction in local property tax rates. In fact, if school districts were to be satisfied with their 1970-71 State-local revenue levels, the State aid received under all the equalization formulas

would permit a majority of districts to abolish the local school property tax. Equally important, if local districts wanted revenues capable of supporting expenditures at 110 percent of the expenditure foundation, $1,179 per pupil, almost all could obtain the necessary funds by levying a local school property tax with no more than a rate of $10 per $1,000 full value.

Even though variable equalization offers the possibility of virtually eliminating school property tax levies, the high amount of State aid could not be supported without imposing one or more of the following likely alternatives: (1) a State-wide property tax, (2) a State-wide sales tax over and above the present 3 percent levy, or (3) a graduated State personal income tax. This study confines itself to the implications of a variable equalization model for an increased State sales or income tax. A State-wide property tax will not be considered given the need for property tax relief in the State.

Table III-10 shows the sales tax rates that would be necessary to finance the State aid component of our nine variable equalization models assuming that the rates applied to all sales except food and drugs. One important and obvious fact emerges from this table: no variable equalization system could be financed through a sales tax rate except at rates that would be economically disastrous and politically impossible. Even if the expenditure level were set at the 10th percentile level, every variable equalization model would require a State sales tax rate of approximately 5-6 percentage points over and above Massachusetts' current effective sales tax rate, assuming that none of the current sales tax revenue goes for the purpose of funding education. A State sales tax, then, might be used to finance some portion of each proposed aid system but not 100 percent of any one system.

Increased use of the State personal income tax would be one of the best means of financing a revised educational aid system in Massachusetts. The personal income tax rates to pay for such variable equalization would be fairly

TABLE III-8

SIMULATED SCHOOL TAX RATE* NECESSARY TO ELIMINATE THE GAP BETWEEN 1970-71 STATE-LOCAL REVENUE AND SIMULATED STATE AID AT THE 90TH PERCENTILE EXPENDITURE LEVEL BY VARIABLE EQUALIZATION MODEL AND SCHOOL DISTRICT TYPE

District Type and Name	Model I	Model II	Model III	Model IV	Model V
Central City					
Boston	$ 0.00	$ 0.00	$ 2.00	$ 0.70	$ 0.00
Lawrence	0.00	0.00	0.00	0.00	0.00
New Bedford	0.00	0.00	0.00	0.00	0.00
Springfield	0.00	0.00	0.00	0.00	0.00
Worcester	0.00	0.00	0.00	0.00	0.00
Rapid Growth Suburban					
Ashland	2.80	4.20	2.10	3.80	2.50
Hingham	4.10	5.70	3.90	5.80	3.50
Millbury	0.00	0.00	0.00	0.00	0.00
North Andover	0.00	0.00	0.80	0.00	0.00
Westport	2.70	2.80	2.30	1.80	2.10
Slow Growth Suburban					
Andover	10.20	11.10	9.10	10.00	8.90
Arlington	1.50	0.90	1.30	1.00	1.00
Easthampton	0.00	0.00	0.00	0.00	0.00
Somerville	0.00	0.00	0.00	0.00	0.00
Whitman	0.00	0.00	0.00	0.00	0.00
Independent Community					
Amherst	9.90	8.30	9.70	8.20	8.30
Greenfield	0.00	0.00	0.00	0.00	0.00
Holyoke	0.00	0.00	0.00	0.00	0.00
Lynn	0.00	0.00	0.00	0.00	0.00
Quincy	2.80	2.40	2.70	2.70	2.40
Rural					
Gardner	0.00	0.00	0.00	0.00	0.00
Groveland	0.00	0.00	0.00	0.00	0.00
Halifax	1.60	2.80	3.10	1.90	1.50
Sturbridge	0.00	1.00	0.00	0.00	0.00
Whately	1.60	1.70	0.80	0.00	1.30

*Tax Rate Per $1,000 Equalized Value.

TABLE III-8 (continued)

SIMULATED SCHOOL TAX RATE* NECESSARY TO ELIMINATE THE GAP BETWEEN 1970-71 STATE-LOCAL REVENUE AND SIMULATED STATE AID AT THE 90TH PERCENTILE EXPENDITURE LEVEL BY VARIABLE EQUALIZATION MODEL AND SCHOOL DISTRICT TYPE

District Type and Name	Model VI	Model VII	Model VIII	Model IX
Central City				
Boston	$ 0.00	$ 0.00	$ 0.00	$ 0.00
Lawrence	0.00	0.00	0.00	0.00
New Bedford	0.00	0.00	0.00	0.00
Springfield	0.00	0.00	0.00	0.00
Worcester	0.00	0.00	0.00	0.00
Rapid Growth Suburban				
Ashland	4.60	2.60	3.60	0.00
Hingham	4.80	3.80	4.40	3.50
Millbury	0.00	0.00	0.00	0.00
North Andover	0.40	0.00	0.10	0.00
Westport	3.50	2.40	3.10	1.20
Slow Growth Suburban				
Andover	10.20	9.60	10.10	9.70
Arlington	0.80	1.20	1.10	0.80
Easthampton	0.00	0.00	0.00	0.00
Somerville	0.00	0.00	0.00	0.00
Whitman	0.00	0.00	0.00	0.00
Independent Community				
Amherst	10.30	9.40	10.10	9.80
Greenfield	0.00	0.00	0.00	0.00
Holyoke	0.00	0.00	0.00	0.00
Lynn	0.00	0.00	0.00	0.00
Quincy	2.10	2.60	2.40	0.30
Rural				
Gardner	0.00	0.00	0.00	0.00
Groveland	0.00	0.00	0.00	0.00
Halifax	4.20	1.60	2.90	1.80
Sturbridge	1.20	0.00	0.50	0.00
Whately	4.00	1.50	2.80	0.00

*Tax Rate Per $1,000 Equalized Value.

TABLE III-9

TAX RATES* REQUIRED TO REACH 110 PERCENT OF THE 90TH PERCENTILE
CURRENT PER PUPIL EXPENDITURE LEVEL IN 1970-71
BY SCHOOL DISTRICT TYPE AND MODEL

District Type and Name	Model I	Model II	Model III	Model IV	Model V
Central City					
Boston	$ 9.27	$ 8.18	$12.22	$10.99	$ 9.59
Lawrence	8.39	7.34	9.64	7.84	8.59
New Bedford	9.45	8.69	10.62	9.70	10.69
Springfield	9.26	8.98	10.13	5.48	9.63
Worcester	9.07	8.50	10.43	10.29	9.24
Rapid Growth Suburban					
Ashland	9.16	10.62	8.65	10.29	8.95
Hingham	8.10	9.66	7.97	9.70	7.51
Millbury	9.65	9.66	10.03	10.38	10.68
North Andover	7.23	6.95	6.78	6.27	7.02
Westport	7.72	7.82	7.38	6.86	7.22
Slow Growth Suburban					
Andover	7.23	8.20	6.20	7.07	5.98
Arlington	6.94	6.37	6.78	6.56	6.45
Easthampton	7.62	7.14	7.18	7.15	8.08
Somerville	8.68	7.53	9.84	8.82	10.11
Whitman	10.42	11.49	11.71	13.89	13.98
Independent Community					
Amherst	8.07	6.38	7.78	6.27	6.92
Greenfield	8.25	8.30	8.16	8.62	8.18
Holyoke	8.49	8.01	10.13	9.80	9.63
Lynn	7.43	6.76	6.98	6.66	7.99
Quincy	7.72	7.43	7.67	7.74	7.41
Rural					
Gardner	8.00	6.95	8.56	7.84	9.05
Groveland	11.29	12.94	14.16	13.13	12.03
Halifax	9.45	10.62	11.02	9.80	9.34
Sturbridge	7.72	8.88	7.14	8.64	7.80
Whately	7.81	7.92	6.49	7.50	7.51

*Tax Rate Per $1,000 Equalized Value.

TABLE III-9 (continued)

TAX RATES* REQUIRED TO REACH 110 PERCENT OF THE 90TH PERCENTILE
CURRENT PER PUPIL EXPENDITURE LEVEL IN 1970-71
BY SCHOOL DISTRICT TYPE AND MODEL

District Type and Name	Model VI	Model VII	Model VIII	Model IX
Central City				
Boston	$ 7.32	$ 9.43	$ 8.29	$ 6.29
Lawrence	8.48	8.49	8.43	5.39
New Bedford	9.96	10.07	9.70	0.00
Springfield	9.96	9.44	9.61	3.42
Worcester	8.69	9.16	8.88	5.02
Rapid Growth Suburban				
Ashland	11.02	9.05	10.09	4.45
Hingham	8.79	7.80	8.44	7.47
Millbury	11.97	10.16	10.81	7.31
North Andover	7.84	7.13	7.53	7.01
Westport	8.58	7.47	8.15	9.30
Slow Growth Suburban				
Andover	7.21	6.61	7.22	6.75
Arlington	6.36	6.70	10.26	6.36
Easthampton	8.79	7.85	8.21	7.04
Somerville	8.26	9.40	8.47	5.96
Whitman	12.72	11.95	11.57	7.74
Independent Community				
Amherst	8.36	7.50	8.22	7.86
Greenfield	9.01	8.22	8.63	6.71
Holyoke	9.32	9.06	8.91	6.59
Lynn	6.78	7.71	7.11	4.45
Quincy	9.20	7.56	8.46	5.32
Rural				
Gardner	8.16	7.52	8.08	7.03
Groveland	15.68	11.66	13.48	6.73
Halifax	11.97	9.40	10.71	9.71
Sturbridge	9.11	7.76	8.42	3.08
Whately	10.07	7.66	8.94	5.44

*Tax Rate per $1,000 Equalized Value.

TABLE III-10

SALES TAX RATES NECESSARY TO FINANCE STATE AID COMPONENT
OF VARIABLE EQUALIZATION ASSUMING SELECTED EXPENDITURE CEILINGS

Expenditure Ceiling	Models I-VIII	Model IX
10th Percentile	7.6%	8.0%
50th Percentile	9.8	10.3
65th Percentile	10.7	11.3
75th Percentile	11.6	12.2
90th Percentile	14.3	15.1

modest, given some supplementation from the State sales tax. Extensive local school property tax reduction that occurred as a result of near full State assumption of educational finances, would further offset objections to this modest increase in personal income tax. This can be seen by examining Tables III-11 and III-12.

Assuming that all federally taxable personal income were also subject to a State levy, Table III-11 shows the average income tax rates that would be necessary to fund the State aid component of our nine different variable equalization models at each level of educational expenditure support. These rates range from a low average rate of 4.9 percent of all federally taxable personal income to a high of 9.3 percent. Assuming that the State would support expenditures at anywhere between the 50th to 75th percentile level would result in average State income rates of 6.4 to 7.5 percent over and above present income tax rates.

Table III-12 shows average personal income tax rates that would be necessary to support our variable equalization formulas on the assumption that all individuals earning less than $10,000 in taxable income would be exempt from the personal income tax. These rates, not surprisingly, are substantially higher than those that might be imposed if all federally taxable income were subject to a State personal income levy. Moreover, they are markedly greater than the average effective personal income tax rates imposed by any other State on income. Although these rates are high, they may be feasible since there are considerable property tax rate reductions that would offset the fiscal burdens of these rates. Furthermore, the rates may become more acceptable with the passage of time if the variable equalization aid plan were phased in with levelling up taking place over three to five years. During that time the growth in personal income might be considerable and reduce the burden of these average rates.

TABLE III-11

AVERAGE INCOME TAX RATES NECESSARY TO FINANCE STATE AID COMPONENT
OF VARIABLE EQUALIZATION MODELS
ASSUMING SELECTED EXPENDITURE CEILINGS--ALL INCOME

Expenditure Ceiling	Models I-VIII	Model IX
10th Percentile	4.8%	5.0%
50th Percentile	6.2	6.5
65th Percentile	6.8	7.1
75th Percentile	7.3	7.7
90th Percentile	9.0	9.5

TABLE III-12

AVERAGE INCOME TAX RATES NECESSARY TO FINANCE STATE AID COMPONENT OF VARIABLE EQUALIZATION MODELS ASSUMING SELECTED EXPENDITURE CEILINGS--INCOME OVER $10,000

Expenditure Ceiling	Models I-VIII	Model IX
10th Percentile	7.2%	7.5%
50th Percentile	9.3	9.8
65th Percentile	10.2	10.7
75th Percentile	11.0	11.6
90th Percentile	13.5	14.3

In the event that Massachusetts were to adopt a higher State-wide personal income tax rate, it would be desirable for the income tax to be progressive in nature. Going on the assumption that the rate of progression in the federal income tax is an acceptable rate, we have calculated graduated personal income rates for Massachusetts that could finance the nine variable equalization plans. The graduated rates, indicated for selected models, are presented in Tables III-13 and III-14. Table III-13 was constructed on the assumption that almost all income earners would be taxed and Table III-14 on the assumption that only persons with taxable income of over $10,000 would be taxed.

From this fiscal analysis of the simulation models, it is evident that Massachusetts would be able to achieve a condition of fiscal neutrality in its school finance system through the adoption of any number of variable equalization aid systems. Moreover, the adoption of such a system would provide considerable property tax relief to a large number of Massachusetts communities. However, the financing of such a system is contingent upon the acceptance of increased reliance on a more graduated State personal income tax and somewhat greater use of a State sales tax that exempts only food and drugs.

TABLE III-13

AVERAGE TAX RATES WITHIN INCOME CLASSES NECESSARY TO FINANCE STATE AID COMPONENT OF VARIABLE EQUALIZATION MODELS ASSUMING SELECTED EXPENDITURE CEILINGS--ALL INCOME

Income Class	Models I-VIII	Model IX
$ 1,000-1,999	5.6%	5.9%
2,000-2,999	6.1	6.4
3,000-3,999	6.5	6.9
4,000-4,999	6.9	7.3
5,000-5,999	7.2	7.6
6,000-6,999	7.0	7.4
7,000-7,999	7.6	8.0
8,000-8,999	7.5	7.9
9,000-9,999	7.6	8.1
10,000-14,999	7.9	8.4
15,000-19,999	8.5	9.0
20,000-24,999	9.3	9.8
25,000-29,999	10.1	10.7
30,000-49,999	11.7	12.3
50,000-99,999	15.7	16.6
100,000-199,999	20.0	21.5
200,000-499,999	22.8	24.0
500,000-999,999	24.0	25.3
1,000,000 +	23.2	24.5

TABLE III-14

AVERAGE TAX RATES WITHIN INCOME CLASSES NECESSARY TO FINANCE STATE AID COMPONENT OF VARIABLE EQUALIZATION MODELS ASSUMING SELECTED EXPENDITURE CEILINGS--INCOME OVER $10,000

Income Class	Models I-VIII	Model IX
$ 10,000-14,999	10.8%	11.4%
15,000-19,999	11.7	12.4
20,000-24,999	12.7	13.4
25,000-29,999	13.7	14.5
30,000-49,999	16.0	16.9
50,000-99,999	21.4	22.7
100,000-199,999	27.2	28.8
200,000-499,999	31.1	32.9
500,000-999,999	32.6	34.5
1,000,000 +	31.6	33.5

CHAPTER III, FOOTNOTES

1/ John E. Coons, et. al., Private Wealth and Public Education, (Cambridge: Harvard University Press, 1970).

2/ President's Commission on School Finance, Schools, People & Money: The Need for Educational Reform, (Washington: Government Printing Office, 1972)

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

We have examined Massachusetts' present system for financing public education and analyzed alternative school finance programs. On the basis of this research, we present conclusions about: (1) the total fiscal system in which Massachusetts finances its schools and (2) fiscal disparities present in the established method of funding public education; and (3) ways in which Massachusetts could achieve a high degree of fiscal equity and neutrality in its school finance system.

The Context of Massachusetts School Finance.

1. Massachusetts is a wealthy state with considerable fiscal capacity with which to finance educational finance revisions. To date, however, it has tapped this capacity to a considerable degree, exhibiting fiscal effort that is above national and regional norms. Future growth in fiscal capacity will have to be used to finance educational aid revisions.

2. Massachusetts' tax burden is among the highest in the country. Property tax relief is an item of major importance. School tax effort, as measured by school expenditures per $1,000 personal income, however, has been considerably below national and regional averages in both 1957 and 1970. Indeed, only a third of Massachusetts' State-local tax effort can be attributed to education.

3. Personal tax burden from residential property and individual income taxes is exceedingly high in Massachusetts. State and local taxes on business have decreased, as a proportion of all taxes, markedly since 1957 and residential property tax effort is 66 percent above national average.

4. Fiscal responsibilities in Massachusetts are still highly localized. Local governments still raise and spend over one-half of all State-local revenues in 1970. While the state government has begun to assume greater fiscal responsibilities between 1957 and 1970, the federal portion of Massachusetts' State-local revenues has increased at an even faster rate. Decreased local fiscal responsibility, then, has been due in large measure to increased federal aid.

5. Massachusetts revenue structure at the State level is in need of some revision if more monies are to be raised for education. Its sales tax base is very strictly defined, being only half of the national average. Consequently, Massachusetts has one of the lowest effective sales tax rates in the country. Commendably, Massachusetts makes extensive use of the

personal income tax; yet, a number of other equally urbanized states have made better use of the tax through a graduated rate structure. In sum, Massachusetts should seek to institute a more broad-based sales tax and an increased graduated income tax in order to both (1) finance its needed educational aid revisions and (2) grant some measure of property tax relief throughout the State.

6. Massachusetts' local revenue structure is almost completely dependent on the property tax. Consequently, there is considerable maldistribution of wealth among Massachusetts school districts. High tax burdens have led to a pattern of residential underassessment or nonresidential underassessment in a number of Bay State communities. This further distortion of local tax burden adds but another element to the need for property tax reform in the State.

7. Per capita state education aid consistently is less than 60 percent of the national average. The minimal nature of this aid is underscored by the fact that as of 1970 only 20 percent of all educational revenues came from State sources - in that regard Massachusetts ranked 48th of the 50 states.

8. Massachusetts has a state aid formula that if fully funded, expanded, and somewhat modified would do much to ease the fiscal disparity problem in education. The underfunding of the formula and the consequent reliance on local property taxes has created a situation in which Massachusetts' school aid equalization performance is surpassed by 32 other states.

Fiscal Disparities in Massachusetts School Finance.

1. There are marked variations in fiscal capacity, educational need, and total and school tax effort among Massachusetts school districts. Central cities have high concentrations of educational need, high total tax rates, moderate to low fiscal capacity, yet per pupil expenditures that are often above-average. Suburbs generally have lower levels of educational need. Many poorer suburbs, however, have extremely high school tax rates. Independent communities and rural areas tend to appear more like cities than suburbs with independent communities having high levels of educational need and rural areas fiscal capacity that is frequently below suburban levels.

2. Wealth is a factor in expenditure disparities in Massachusetts school districts. Districts having considerable wealth use that wealth to raise high levels of expenditure with only average tax rates. Central cities continue to keep pace, in some instances, even though in doing so they aggravate the tax differentials between city and suburb. Low wealth communities, because of minimal State support in the Massachusetts' school finance system have to exert onerous tax rates to provide even adequate levels of educational expenditure.

3. Some high need communities still are supporting high levels of educational expenditure. Other high need communities, like New Bedford, for example, find themselves in a severely constrained fiscal situation. Presently these communities do not get substantially more State aid than more wealthy and lower need jurisdictions.

4. High school taxes in Massachusetts do not guarantee higher school expenditures. The lack of adequate equalizing State aid prevents high tax communities from receiving extra aid as (1) incentive for school tax effort, or (2) compensation for tax relief. Being willing to tax yourself for schools is not a factor that triggers additional aid.

5. In sum, school financing in Massachusetts does not take into account variations in educational need, effort, or capacity. Consequently, the school support system is ripe for a Serrano v. Priest challenge.

Reforming Massachusetts School Finance.

1. Massachusetts can replace its present school finance system with one which achieves a high degree of fiscal neutrality; that is, a system which insures a high degree of correlation between revenue effort and revenue yield.

2. Massachusetts can use a high support variable equalization system to revise its school financing system. Using its present formula or some other more comprehensive formula and supporting 90 percent of all school expenditures at the 75th or 90th percentile level would permit all but a few Massachusetts school districts to raise their educational expenditures and also at the same time experience substantial reductions in property tax relief.

3. School aid formulae can be so designed as to channel more money to city school districts in light of their (1) extraordinary educational needs, or (2) their exceptionally high tax effort or both. Also other models would permit the direction of more resources to hardpressed rural districts which appear wealthy in terms of real property values but which have relatively less fiscal capacity in terms of real income. Any number of these refinements are possible within the structure of a revised basic aid formula. Indeed, these refinements are an important step in achieving a more comprehensive definition of fiscal neutrality.

4. Massachusetts might make greater use of its sales and income taxes to finance its school reforms. These tax increases, if structured properly, could add to the progressivity of the State tax structure and provide for substantial property tax relief at the same time. At the present time, however, the State is foreclosed from a graduated income tax which is the most progressive revenue instrument in the State-local fiscal system.

SUMMARY RECOMMENDATIONS

1. Massachusetts should change its school finance formula for three main reasons: (1) to equalize educational opportunity and thereby protect itself from a Serrano v. Priest school finance suit, (2) to provide for local school property tax relief, and (3) to raise the level of State responsibility for school finance.

2. Massachusetts should adopt a staggered program of school finance reform. Over the next five years, it should raise the level of reimbursable expenditure to that expended by the 10th, 50th, 65th, 75th, and finally to the 90th percentile. It should reimburse these levels of expenditure at a standard rate of 90 percent State share.

3. To distribute State educational aid, the State should rely on an aid formula that takes into account the relative educational need, fiscal capacity, and tax effort of a given school district. More specifically, it should base its equalization formula on the relative ratios of per capita income of the district to the State. The higher the local per capita income, the lower the State share. It should also adjust these ratios to reflect variations in educational need as measured by the number of poor pupils as a percent of total student body and variations in tax effort as measured by total taxes per $1,000 equalized property values. These adjustments would help channel aid into Massachusetts' large cities and local districts which are most in need of relief.

4. To reform school financing, the State should broaden the base of its sales tax and raise its effective rate. It should also broaden the base of the income tax as suggested by the Master Tax Commission and also raise its rates. Consideration should also be given to raising the corporate income tax to reflect local school property tax reductions on business property. Moreover, the State should consider adopting measures that will reduce the effective sales tax burden on lower income individuals and families. With these measures, school finance reform should permit virtual abolition of school property taxes in the Commonwealth.